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By the time a fifth edition was required, so great was the demand in this country for something more than the Linnæan method, that it was considered the time had arrived for the experiment being fully made of using the Jussieuan or Natural System for the general arrangement; while the Linnæan was introduced into the preface as an index to the other, for those who still cling to it, as well as for beginners. Accordingly the plan was followed, so advantageously employed by Beck in his *Flora of the Middle States of North America*, Mackay in his *Flora Hibernica*, and Koch in his *Flora Germanica*, of giving a synoptical Linnæan Table of the Classes, Orders, and Genera, referring to the place in the main body of the work where the species is described and arranged according to the natural method.

That this experiment was not unsatisfactory is demonstrated by the fact, that a new edition has been again demanded, notwithstanding that it was not allowed to walk the course, Mr. Babington, after the fifth edition was printed, having brought out his *Manual*, arranged precisely in the same way, and Mr. Steele, in 1847, his *Field-Book*, in which also a natural system is professedly followed. The Linnæan method is not, therefore, now reverted to.

"Tempora mutantur, et nos mutamur in illis," is a trite, although not a classical, adage. Of late years so great has been the demand for cheap publications, that some have predicted that, ere long, the only vehicle of communication will be a newspaper. The time, however, is not yet arrived, when the general readers of the "broad sheet" could appreciate a description of plants. But it has been deemed advisable to reduce, in the present edition, the size of the page and of the type. By this means, without increasing the price, not only are all the useful observations in former editions retained, and many others added, but synoptical tables are given of all the orders under each

great division, and also similar tables of the genera under each order, the detailed characters of the orders being placed as formerly at the head of the genera, and those of the genus at the head of the species.<sup>1</sup>

By those who desire fuller information respecting the *natural affinities* of Plants, especially as concerns universal Botany, the following works may be studied with advantage:—Dr. Lindley's *Introduction to Botany*, and his admirable *Vegetable Kingdom*; Dr. Walker Arnott's article "Botany," in the 5th vol. of the 7th edition of the *Encyclopædia Britannica*; the 7th and last edition (by Sir W. J. Hooker) of Sir J. E. Smith's *Introduction to Botany*; and the second part of Dr. Balfour's *Manual of Botany*.

In most Floras of this country published previously to the *British Flora*, however excellent in other respects, either too much or too little space was devoted to the generic and specific descriptions and synonyms: in the one case swelling the book to a size which entails both expense on the purchaser, and difficulty in consulting the several volumes; in the other, reducing the technical characters to the shortest possible compass, so that they can scarcely be available, except to persons who are partially acquainted with the plant under examination, or with some of its near allies. Between these extremes a middle course was steered, by giving diagnostic remarks where, and where only, they appeared necessary for the discrimination of British species, or such very distinct foreign ones as might possibly be found in this country, and be confounded with them; while the synonyms, with few exceptions, were confined to those of the writer who first described the plant under the name adopted, to a good figure, and in general to a reference to

<sup>1</sup> Similar analytical tables of the natural orders, and of the genera, of most of the more difficult ones have been published in Glasgow; and although intended solely for Dr. Walker Arnott's students, they may be found of advantage to all who possess the 5th or last edition of this Flora, to the pages of which reference is made.

a single Flora only of Great Britain. In the present edition these rules have been slightly departed from. So many species have been, of late years, introduced from the Continent with seed-corn, or have escaped from our gardens, and so many of our former well-known species have been split into two or more, that it has been deemed proper to extend, in several instances, the characters of both the genera and species, introducing frequently a notice of the more minute parts which a practised botanist requires to examine, but which a student may omit, if his immediate object be to attain a knowledge of the name, until he has advanced in the study. Rarely, however, have the genera or species been made to depend on such minute characters, and therefore few alterations have been proposed on the limits of either one or other from what will be found in former editions : when such alteration has taken place in the former, it is solely from a desire of simplifying the generic characters.

What is a genus, or what is a species, is a point upon which scarcely two botanists are agreed at the present day. With regard to the former, however much it may be necessary to subdivide in a system comprehending the known plants of the whole world, so as to retain only a limited number of species in each Genus, the same does not apply to a local Flora ; and it is there preferable to constitute sections or subgenera, particularly when the limiting characters are inconstant, difficult, or obscure. A *species* cannot be so treated : it is formed, by our Maker, as essentially distinct from all other species, as man is from the brute creation ; it can neither for convenience be united with others, nor be split into several ; but the difficulty is to ascertain what is such a primitive or natural species ; and it is here so great a difference of opinion exists. Some pronounce a species to be distinct if it presents a different habit or appearance to the eye, particularly if this be constant, although often

indefinable: others consider it a species, although exhibiting no difference of aspect, provided it can be defined, even although the differences are so minute that they can be detected only by the microscope; while a third party are of opinion that the validity of a species may be tested by cultivation. The Authors are not inclined to believe that any one of these tests is sufficient. Of all the works of Creation, we have a specific account only of Man; but as the others appear to be formed on the same plan, there is a strong presumption in favour of those arguments which assimilate the species of plants to what we know of the human race. With regard to mankind, it is universally acknowledged that there now exists so great diversity between an inhabitant of the torrid and an inhabitant of the frigid zone, and even of any one part of the globe and of another, that it can only be accounted for on the principle that each succeeding generation has a tendency to recede more and more, in general appearance, from the original type; and if we apply this to the Vegetable Kingdom, we must at once allow that, although cultivation may sometimes in a single year or two satisfactorily show that two supposed species are the *same*, a thousand years' cultivation cannot prove them *distinct*. The more we cultivate a plant, or the more it is limited in its wild state to a particular climate or place of growth, the more permanency is given to the peculiarities of what was originally derived from the same root, or even seed-vessel, of another apparently widely different form. Hence a rare mountainous plant may frequently be a mere alpine permanent state of some common lowland species, or a Swedish species the more northern race or state of a southern one; and it is from this cause that we see in our gardens so many called species (as in the genus *Achillea*), which cannot now be referred satisfactorily to any of the wild ones, although primarily derived from them. Knowing, then, this tendency of Nature to give permanency to

a variety of forms obtained from one primitive species,



happily become exceedingly numerous, as well as the *Phytologist*, may, for information on this head, be consulted with great advantage.

Mr. J. E. Bowman, with his accustomed good judgment, suggested on a former occasion the propriety of erasing from the *British Flora* such plants as *Buffonia annua*, *Swertia perennis*, *Gentiana acaulis*, *Stipa pennata*, with some others universally acknowledged to be, at the present day, neither indigenous to the British Isles, nor naturalized among us; and our first impression was to follow his advice. But they were retained out of respect to the memory of Sir J. E. Smith, who saw reason to consider them British, and who introduced them as such not only into his *Flora Britannica*, but into *English Botany* and the *English Flora*. In the present edition the same motives have induced the Authors to permit them to remain, except in one or two instances, where there are grounds to believe that the original specimen was obtained from a garden, or that one plant had been mistaken for another. Those, however, which no longer exist in the given localities, as well as the many that have been or are daily becoming naturalized among us, whether by the agency of man or of birds, are branded with an asterisk (\*); but there are also numerous ones, as the *Martagon Lily* and *American Touch-me-not*, which can have no claim whatever to a place in our Flora: in many cases, however, they have been briefly noticed at the close of an allied species or genus; and when the genus itself is not British, an abridged character of it has been sometimes introduced into the conspectus at the head of its proper order, especially where the plant is now so widely diffused, as the *Monkey-flower*, that it might otherwise puzzle a student. With regard to synonymes, they are even more abridged than in former editions; but the reader will always find a reference to *English Botany* (*E. B.*) and its *Supplement* (*E. B. S.*). Foreign references are almost entirely omit-

ted, this *Flora* being applicable solely to the plants of Great Britain and Ireland, with the adjacent islands. Those who desire a further knowledge of the various names given, as well as a full specific character, or such as will exclude all other known plants, wheresoever found, can only attain this by consulting a General *Flora*, such as De Candolle's *Prodromus*.

It may be well to remark here, that the figures which precede the season of flowering of the plants in the descriptive pages, viz. ☉, ♂, ♃, and ♄, signify :

- ☉ (The Sun), implying that the plant is of annual duration, because the earth requires a year to perform its revolution round the sun.
- ♂ (Mars), a biennial plant ; because that planet is two years in performing a similar revolution.
- ♃ (Jupiter), a perennial plant or root ; because of the great length of time, nearly 12 years, required by that planet for such a revolution.
- ♄ (Saturn), a shrub or tree, which living for a great number of years, is represented by a planet requiring nearly 30 years to revolve round the sun.

Any peculiar terms employed, particularly among the *Compositæ* and *Grasses*, are explained at the commencement of these orders.

In preparing the present edition, the Authors have to acknowledge their obligations to many friends, not only for notes, but for permission to inspect authentic specimens. In particular they may allude to Mr. Borrer, Mr. H. C. Watson ; Mr. Backhouse, of York ; Dr. Balfour, of Edinburgh ; Mr. William Gourlie, of Glasgow ; and Dr. Bromfield, of the Isle of Wight. Specimens of all the scarcer or local species, whether indigenous or only naturalized, will be thankfully received by them both.

This volume terminates with the *Ferns* and their allies, comprehending the Cryptogamic vascular plants : the rest

of the *Cryptogamia*, or the *Cellulares* of De Candolle, have however been published uniformly with the previous editions of this work, constituting the second volume; and also with Sir J. E. Smith's *English Flora*, forming the fifth volume, and completing the Flora of the British Islands.

1st July, 1850.

## CLASSES AND ORDERS

### THE LINNÆAN SYSTEM OF BOTANY.

1211

*The Twenty-four Classes are subdivided into ORDERS.*

(See the characters of the Orders in the next page.)

The *Orders* of the first thirteen Classes are founded on the number of *Styles* in each flower :

MONOGYNIA, 1 *Style* ; DIGYNIA, 2 ; TRIGYNIA, 3 ; TETRAGYNIA, 4 ; PENTAGYNIA, 5 ; HEXAGYNIA, 6 ; HEPTAGYNIA, 7 ; OCTAGYNIA, 8 ; DECAGYNIA, 10 ; POLYGYNIA, many *Styles*.

The *Orders* of the 14th Class are two :

1. GYMNOSPERMIA, *Seeds* 4, apparently naked.
2. ANGIOSPERMIA, *Seeds* in a distinct seed-vessel.

The *Orders* of the 15th Class are two :

1. SILICULOSA, *Seeds* in a short Pod, or Pouch.
2. SILIQUOSA, *Seeds* in a long Pod.

In the 16th, 17th, and 18th Classes, the *Orders* are founded on the number of *Stamens* in each set :

TRIANDRIA, 3 ; PENTANDRIA, 5 ; DECANDRIA, 10, &c., in each set.

The *Orders* of the 19th Class are three, and are founded on the structure of the flower, which is *compound* :

1. ÆQUALIS . . . All the *florets* perfect.
2. SUPERFLUA . . . { *Florets* of the *disk* perfect ; of the *ray*,  
with Pistil only.
3. FRUSTRANEA . . . { *Florets* of the *disk* perfect ; of the *ray*,  
with neither Stamen nor Pistil.

The *Orders* of the 20th Class are founded on the number of the *Stamens* :

MONANDRIA, 1 ; DIANDRIA, 2, &c.

The *Orders* of the 21st and 22d Classes are founded on the number, union, and situation of the *Stamens* :

MONANDRIA, DIANDRIA, &c. MONADELPHIA, &c.

The *Orders* of the 23d Class are three, and are :

MONŒCIA, *perfect flowers*, accompanied with others that are *barren* (without *pistil*), or *fertile* (without *stamens*), or *both*, all on *one plant* ; DIŒCIA, the same, on *two different plants* ; TRIŒCIA, the same, on *three different plants*.

The *Orders* of the 24th Class are Natural Orders or Families :

1. FILICES<sup>1</sup> ; 2. MUSCI ; 3. HEPATICÆ ; 4. LICHENES ;
5. CHARACEÆ ; 6. ALGÆ ; 7. FUNGI.

<sup>1</sup> In the following pages considered a subclass ; including *Polypodiaceæ*, *Osmundaceæ*, *Ophioglossæ*, *Lycopodiaceæ*, *Marsileaceæ*, and *Equisetaceæ*.

# SYNOPTICAL TABLE

## THE CLASSES, ORDERS, AND GENERA OF BRITISH PLANTS,

ARRANGED ]  
ACCORDING TO THE LINNÆAN METHOD,  
WITH REFERENCES TO THE PAGE WHERE THE SPECIES ARE DESCRIBED  
IN THE BODY OF THE WORK.

### CLASS I. MONANDRIA.<sup>1</sup> 1 stamen.

#### Ord. I. MONOGYNIA.<sup>2</sup> 1 style.

\* *Leaves without stipules.*

1. **SALICORNIA.** Perianth single, inferior, tumid, fleshy, obscurely lobed. Style short, terminal; stigmas 2—3-fid. — Sea-side plants. p. 350.
2. **HIPPURIS.** Perianth single, superior, forming a very indistinct rim to the germen. Style and stigma simple. — Fresh-water erect plants. p. 138.
3. **ZOSTERA.** Perianth 0. Stamens and pistils inserted alternately in two opposite rows upon one side of a thin flat spadix. Style bifid. — Marine plants with long leaves. p. 472.
4. **CENTRANTHUS.** Perianth double. Calyx a thickened margin at the top of the germen, at length unfolding into a pappus. Corolla spurred at the base. — Terrestrial plants. p. 192.

<sup>1</sup> From *μνος*, *one*, and *ανη*, here applied to the stamen. The other classes, as far as *Icosandria*, meaning 20 stamens, are likewise derived from the Greek numerals. *Uxyandria* in the same way is from *πολυς*, *many*.

<sup>2</sup> From *μνος*, *one*, and *γυνη*, here made applicable to the pistil or style. When the styles are so short as not to be visible, the stigmas are reckoned.

**\*\* Leaves with stipules adnate to their petiole.**

5. *ALCHEMILLA*. Perianth single, inferior, turbinate. Style lateral. Stigma entire. p. 124.

Ord. II. *DIGYNIA*. 2 styles.

6. *CALLITRICHE*. Flowers axillary, solitary. Fruit with 4 cells and seeds. — Leaves opposite. Aquatic or marsh plants. p. 370.
7. *FESTUCA*. Flowers imbricated, glumaceous. Fruit a caryopsis, 1-seeded. — Leaves alternate. Terrestrial grasses. p. 543.

CLASS II. *DIANDRIA*. 2 stamens.

Ord. I. *MONOGYNIA*. 1 style.

\* *Perianth double, inferior.*

† *Corolla monopetalous, regular.*

1. *LIGUSTRUM*. Cor. 4-cleft. Berry 2-celled. p. 263.

†† *Corolla monopetalous, irregular. Seeds inclosed in a pericarp which forms one piece.*

2. *VERONICA*. Cor. 4-cleft, rotate, not spurred. Caps. 2-celled. p. 289.

3. *LENTIBULARIACEÆ*. Cor. ringent or personate, spurred. Caps. 1-celled. p. 325.

††† *Corolla monopetalous, irregular. Germen and fruit deeply 4-lobed, or apparently formed of 4 naked seeds.*

4. *LABIATÆ* — (*LYCOPUS* and *SALVIA*). p. 305.

†††† *Sepals and petals 4.*

5. *CRUCIFERÆ*. p. 20.

**\*\* Perianth double, superior.**

6. *CIRCÆA*. Petals 2. p. 137.

**\*\*\* Perianth single and inferior, or none.**

7. *FRAXINUS*. Perianth 0. Caps. 2-celled, compressed, foliaceous at the extremity. — Trees. p. 263.

8. *CRUCIFERÆ*. Perianth 4-leaved. — Herbaceous plants. p. 20.

9. *SALICORNIA*. Perianth turbinate, fleshy, obscurely lobed. Fruit a 1-seeded utricle, included within the enlarged perianth. — Sea-side plants. p. 350.

10. *LEMNA*.<sup>1</sup> Perianth monophyllous, membranaceous, urceolate. Fruit utricular.—Fresh-water minute floating plants. p. 464.  
 11. *CYPERACEÆ*. Flowers glumaceous, imbricated. — Leaves with entire sheaths—(*CLADIUM* and *RHYNCHOSPORA*). p. 474.

Ord. II. *DIGYNIA*. 2 styles.

12. *CALLITRICHE*. Flowers solitary, axillary. Fruit of 4 cells and seeds. — Leaves opposite. p. 370.  
 13. *GRAMINEÆ*. Flowers glumaceous, imbricated. Fruit a caryopsis, 1-seeded. — Leaves alternate, with split sheaths—(*ANTHODANTHUM*, *HIEROCHLOÆ*, and *BROMUS*). p. 507.

CLASS III. *TRIANDRIA*. 3 stamens.

Ord. I. *MONOGYNIA*. 1 style.

\* *Perianth superior*.

1. *VALERIANACEÆ*. Perianth double. Cor. gibbous at the base, 5-cleft. Fruit 1-seeded. p. 190.  
 2. *IRIDACEÆ*. Perianth single, petaloid, 6-cleft. p. 426.

\*\* *Flowers inferior (dry and chaffy)*.

3. *CYPERACEÆ*. Flowers each of a single glume, several imbricated and forming a spikelet. Achene 1-seeded.—Leaves with entire sheaths. p. 474.  
 4. *GRAMINEÆ*. Flowers of 2 glumellas, with or without external glumes. Caryopsis 1-seeded. — Leaves with split sheaths—(*NARDUS*, *SESLERIA*, and *SPARTINA*). p. 507.  
 5. *JUNCUS*. Perianth 6-partite. Caps. 3-celled, several-seeded. p. 446.

Ord. II. *DIGYNIA*. 2 styles.

6. *GRAMINEÆ*. p. 507.

Ord. III. *TRIGYNIA*. 3 styles.

7. *MONTIA*. Cal. of 2 leaves. Caps. solitary, 3-valved, 3-seeded. — Stipules none. p. 142.  
 8. *HOLOSTREUM*. Cal. of 5 leaves. Caps. solitary, 1-celled, opening at the end with 6 teeth. — Stipules none. p. 70.  
 9. *POLYCARPON*. Cal. of 5 leaves. Caps. solitary, 1-celled, 3-valved. — Stipules membranous. p. 144.  
 10. *TILLÆA*. Cal. of 3 leaves. Carpels 3. — Stipules wanting. p. 146.

<sup>1</sup> This genus, placed here by Linnæus, is really monœcious, and the supposed perianth is a spatha with one barren and one fertile flower.



## CLASS IV. TETRANDRIA. 4 stamens equal in height.

## Ord. I. MONOGYNIA. 1 style.

\* *Perianth double. Corolla monopetalous, superior.*

1. DIPSACACEÆ. Flowers capitate, within a common involucre. Calyx double: one cup-shaped or membranaceous, the other minute or of bristles. Fruit 1-seeded. p. 194.
2. RUBIACEÆ.<sup>1</sup> Flowers solitary. Calyx entire or toothed at the margin. Fruit 2-seeded. — Leaves whorled. p. 186.

\*\* *Perianth double. Corolla monopetalous, inferior. Seeds 2 or more.*† *Germen deeply 4-lobed. Style from between the lobes. Fruit splitting into 4 achenes.*

3. LABIATÆ. Cal. 4-cleft. Cor. coloured. p. 305.

†† *Germen or fruit of one piece or covering, including several seeds. Style terminal.*

4. GENTIANACEÆ. Cal. 4-cleft. Cor. coloured. Stamens shorter than the corolla, alternate with its lobes. Caps. 1-celled, 2-valved at the apex. p. 265.
5. PLANTAGO. Cal. of 4 pieces. Cor. scarious, the segments reflexed. Stam. much longer than the corolla. Caps. 2-celled, bursting all round transversely. p. 337.
6. CENTUNCULUS. Cal. 4-partite. Cor. coloured. Stam. shorter than the corolla, opposite to its lobes. Caps. 1-celled, bursting all round transversely. p. 334.

\*\*\* *Perianth double. Cor. of 4 petals.*

7. EPIMEDIUM. Cal. of 4 leaves. Pet. inferior, with an inflated nectary on the upper side. Stam. opposite to the petals. p. 14.
8. CRUCIFERÆ. Cal. of 4 leaves. Pet. inferior, without a nectary. Stam. opposite to the petals. p. 20.
9. EUONYMUS. Cal. 4-cleft, with a flat disk lining the base inside. Petals perigynous, inserted into the margin of the disk. Stam. alternate with the petals. Germen 3—4-celled. p. 90.
10. CORNUS. Cal. of 4 teeth. Pet. without a nectary, superior. Germen 2-celled. p. 182.

\*\*\*\* *Perianth single.*

- 10a. MAIANTHEMUM. Perianth inferior, petaloid, 4-partite. Stamens inserted into the base of the segments of the perianth, and op-

<sup>1</sup> In some of the genera, especially *Galium*, the calyx forms so small a rim or margin to the germen as to be scarcely visible, its tubular part being incorporated with the germen.

- posite to them. Germen 2-celled.—Leaves alternate, parallel-veined, without stipules. p. 433.
11. **PARIETARIA.** Perianth inferior, 4-fid, campanulate. Stam. inserted upon the lobes of the perianth and opposite to its segments. Fruit 1-seeded.—Leaves netted-veined, with minute stipules. p. 374.
  12. **ALCHEMILLA.** Perianth inferior, 8-cleft, the 4 alternate and outer segments the smallest. Stam. inserted into the mouth of the perianth, alternate with its larger lobes. Germen 1-seeded.—Leaves alternate, with conspicuous stipules adhering to their petiole. p. 125.
  13. **SANGUISORBA.** Perianth inferior, 4-lobed, with 4 scales or bractees at the base. Stam. inserted into the mouth of the perianth, opposite to its lobes. Germen 1-seeded.—Leaves alternate, with conspicuous stipules adhering to their petiole. p. 126.
  14. **ISNARDIA.** Perianth superior, its limb 4-partite. Stamens inserted at the bottom of the limb of the perianth, and opposite to its leaves. Germen 4-celled. Capsule many-seeded.—Leaves opposite, without stipules. p. 137.
  15. **THESIUM.** Perianth superior, the limb 4-cleft. Stamens inserted at the base of the lobes of the perianth, and opposite to them. Germen 1-celled. Fruit drupaceous, 1-seeded. p. 362.

•                      Ord. II. DIGYNIA. 2 styles.

\* *Perianth double. Leaves opposite or none.*

16. **BUFFONIA.** Cal. of 4 leaves. Cor. of 4 petals.—Leaves opposite. p. 64.
17. **GENTIANA.** Cal. 4-cleft. Cor. monopetalous, 4-cleft. Capsule 1-celled, many-seeded, 2-valved at the apex.—Leaves opposite. p. 267.
18. **CUSCUTA.** Cal. 4-cleft. Cor. monopetalous, 4-cleft. Capsule 2-celled, 4-seeded, opening transversely.—Leaves wanting. p. 271.

\*\* *Perianth single. Leaves alternate with adnate stipules.*

19. **ALCHEMILLA.** Perianth 8-cleft; stamens alternate with its inner lobes. p. 125.
20. **SANGUISORBA.** Perianth 4-cleft; stamens opposite to its lobes. p. 126.

•                      Ord. III. TETRAGYNIA. 4 styles.

21. **CARYOPHYLLACEÆ.** Cal. of 4 leaves. Pet. 4, or none. Filaments conspicuous. Caps. 1-celled, several-seeded.—Leaves opposite. p. 54.
22. **RADIOLA.** Cal. of 4 leaves, united up to their middle, each

- mostly 3-cleft. Pet. 4. Caps. of 8 cells, 8 valves, and 8 seeds. p. 74.
23. *TILLÆA*. Cal. of 4 leaves. Pet. 4. Capsules 4. p. 146.
24. *ILEX*. Cal. 4-toothed. Cor. rotate, 4-cleft. Stigmas 4, sessile. Fruit fleshy, including 4 one-seeded stony nuts. p. 262.
25. *POTAMOGETON*. Perianth single, of 4 scales. Anthers sessile. Pistils 4. Achenes 4, sessile. p. 465.
26. *RUFFIA*. Perianth 0. Pistils 4. Achenes 4, pedicellate. p. 471.

## CLASS V. PENTANDRIA. 5 stamens.

### Ord. I. MONOGYNIA. 1 style.

\* *Perianth double, inferior. Cor. monopetalous. Germen deeply 4-lobed: style from between its lobes. Fruit splitting into 4 achenes.*

1. *BORAGINACEÆ*. p. 272.

\*\* *Perianth double, inferior. Cor. monopetalous. Germen or fruit of one piece or covering, including several seeds: style terminal.*

† *Stamens opposite to the segments of the corolla.*

2. *PRIMULACEÆ*. Germen and capsule 1-celled, with several seeds upon a globular free central placenta. p. 328.

†† *Stamens alternate with the lobes of the corolla.*

3. *GENTIANACEÆ*. Germen and caps. 1-celled, with several parietal seeds. Anthers straight. p. 265.
4. *ERYTHRÆA*. Germen and caps. 2-celled, linear, many-seeded. Anthers at length spirally twisted. p. 266.
5. *SOLANACEÆ*. Germen and fruit 2- or half 4-celled, many-seeded. Limb of the cor. plaited in bud. Stamens upon the cor.: anthers straight. p. 281.
6. *VERBASCUM*. Germen and capsule 2-celled, many-seeded. Limb of the cor. imbricated in bud. Stam. upon the cor.: anthers straight. p. 302.
7. *CONVOLVULACEÆ*. Germen 1—2-celled, with 4 seeds at its base. Caps. 1—2-celled, 2—4-seeded. Cor. campanulate, plaited in bud. Stam. upon the corolla: anthers straight. Stigmas 2. p. 270.
8. *POLEMONIUM*. Germen and caps. 3-celled, 3-valved. Cor. rotate. Stam. upon the mouth of the corolla: anthers straight. Stigmas 3. p. 270.
9. *AZALEA*. Germen and caps. 2—3-celled, many-seeded. Cor. shortly campanulate. Stam. free, or nearly so, from the corolla: anthers straight. p. 258.

10. *VINCA*. Fruit of 2 erect follicles. Cor. salver-shaped, the segments spirally imbricated in bud. Stam. upon the corolla; anth. straight. p. 264.

\*\*\* *Perianth double, wholly or half superior. Cor. monopetalous.*

† *Stam. opposite the lobes of the cor. and inserted upon its tube.*

11. *SAMOLUS*. Cor. with 5 scales (imperfect stamens) alternate with its lobes. p. 334.

†† *Stamens alternate with the lobes of the cor., and free from it.*

12. *LOBELLIA*. Style glabrous, with a ring of hairs below the stigma. Cor. irregular, cleft on the upper side. Anthers united, dissimilar. p. 250.

13. *CAMPANULACEÆ*. Style pubescent above the middle, without a ring of hairs below the stigma. p. 246.

††† *Stamens alternate with the lobes of the cor., and inserted upon it.*

14. *CAPRIFOLIACEÆ*. Cor. irregular (*LONICERA*), or regular (*VIBURNUM*). p. 183.

\*\*\*\* *Perianth double, inferior. Cor. of several petals.*

† *Flowers regular. Stamens distant. Fruit without a beak.*

15. *RHAMNUS*. Cal. urceolate, 5-cleft. Pet. 5, small. Stam. opposite to the petals. p. 91.

16. *EUONYMUS*. Cal. flat, 5-cleft, having a flat disk within. Pet. roundish. Stam. alternate with the petals, inserted upon the disk. Caps. 3—5-celled, several-seeded. — Shrubs, without membranaceous stipules. p. 90.

17. *PARONYCHIACEÆ*. Cal. of 5 leaves, without a flat disk. Petals reduced to mere subulate scales or filaments. Stam. alternate with the petals. Fruit (minute) 1-seeded. — Herbaceous plants, with membranaceous stipules. p. 142.

†† *Flowers regular. Stamens conniving into a tube. Fruit with a long beak*

18. *GERANIACEÆ*. p. 82.

†† *Flowers very irregular, with a spur.*

19. *IMPATIENS*. Cal. and cor. together composed of 6 pieces, two outer and lateral ones deciduous. Germen 5-celled. Caps. of 5 elastic valves. p. 86.

20. *VIOLA*. Cal. of 5 leaves, extended at the base, persistent. Pet. 5. Germen 1-celled. Caps. 3-valved. p. 46.

\*\*\*\*\* *Perianth double, superior. Cor. of 5 petals.*

21. *RIBES*. Cal. 5-cleft, bearing the petals and the stamens. Style divided. Germen and berry 1-celled, many-seeded. p. 150.

22. *HEDERA*. Cal. of 5 teeth. Pet. and stam. inserted at the top of the germen. Style single. Germen 5-celled. Berry 3—5-seeded. p. 181.

\*\*\*\*\* *Perianth single.*

23. *GLAUX*. Perianth inferior, campanulate, coloured, of 1 piece, 5-lobed. Stamens alternate with its lobes. p. 331.  
 24. *PARONYCHIACEÆ*. Perianth inferior, of 5 leaves. Stam. opposite to the leaves of the perianth, with 5 alternating subulate scales or filaments. p. 142.  
 25. *CHENOPODIACEÆ*. Perianth inferior, deeply 5-cleft. Stam. opposite to the segments of the perianth, without alternating filaments. Style 2—3-partite. p. 343.  
 26. *THESIUM*. Perianth superior. Stam. opposite to the lobes of the perianth. p. 362.

## Ord. II. DIGYNIA. 2 styles.

\* *Perianth double, inferior. Cor. monopetalous.*

27. *GENTIANACEÆ*. Germen 1-celled, many-seeded. Caps. 2-valved.—Leaves opposite. p. 265.  
 28. *CUSCUTA*. Germen 2-celled, 4-seeded. Caps. bursting all round transversely at the base, 2-celled, with the cells 2-seeded.—Parasitical leafless plants, with filiform twining stems. p. 271.

\*\* *Perianth double, superior. Pet. 5. Seeds 2.<sup>1</sup>*

29. *UMBELLIFERÆ*. p. 156.

\*\*\* *Perianth inferior. Pet. 5 or wanting.*

30. *STAPHYLEA*. Cal. coloured, 5-cleft, with an urceolate disk at the base. Pet. 5, as long as the calyx. Caps. membranaceous, with several bony seeds.—Shrubs, with compound leaves and deciduous stipules. p. 88.  
 31. *PARONYCHIACEÆ*. Cal. of 5 leaves. Pet. resembling sterile filaments or scales. Fruit 1-seeded, not winged.—Herbaceous plants. Leaves opposite, with membranaceous stipules. p. 142.  
 32. *SCLERANTHUS*. Perianth single, urceolate, contracted at the mouth. Stam. upon the throat of the perianth. Fruit

Fruit covered by the perianth, 1-seeded, not winged. — Stipules none. p. 343.

34. **POLYGONUM.** Perianth single, coloured, 5-parted. Stam. inserted at the base of the perianth. Achene 1-seeded, wingless. — Herbaceous plants, with alternate leaves and sheathing stipules. p. 353.
35. **ULMUS.** Perianth single, 4—6-cleft. Fruit longer than the perianth, compressed, winged all round (a *samara*), 1-seeded. — Trees, with alternate leaves and minute stipules. p. 375.

### Ord. III. TRIGYNIA. 3 styles.

\* *Flowers superior. Cor. monopetalous, 5-lobed.*

36. **VIBURNUM.** Berry usually 1-seeded. — Leaves simple. p. 184.
37. **SAMBUCUS.** Berry 3—4-seeded. — Leaves pinnated. p. 184.

\*\* *Flowers inferior.*

† *Perianth double. Petals 5.*

38. **TAMARIX.** Stigmas sessile, feathery. Caps. 1-celled, 3-valved, with many comose seeds. p. 140.
39. **PARONYCHIACEÆ.** Fruit with one naked seed. — Leaves with membranous stipules — (*CORRIGIOLA* and *POLYCARPON*). p. 142.
40. **CARYOPHYLLACEÆ.** Caps. 1-celled, with several naked seeds. — Leaves without stipules — (*STELLARIA* and *HOLOSTEUM*). pp. 68, 70.

†† *Perianth single.*

41. **CHENOPODIACEÆ** — (*CHENOPODIUM* and *SUÆDA*). pp. 344, 347.

### Ord. IV. TETRAGYNIA. 4 styles.

42. **PARNASSIA.** Cal. deeply 5-cleft. Petals 5. Nectarics 5, heart-shaped, fringed with globular-headed filaments. Capsule 1-celled, 4-valved, each valve bearing a longitudinal linear receptacle with numerous seeds. p. 51.

### Ord. V. PENTAGYNIA. 5 styles.

\* *Stamens inserted upon the base of the petals. Cal. of 1 piece.*

43. **PLUMBAGINACEÆ.** Cal. funnel-shaped, plaited, dry and membranaceous. Pct. 5, united at the base, bearing the stamens. Caps. 1-seeded, invested by the calyx. p. 334.

\*\* *Stam. inserted upon the receptacle, free from the cal. and petals. Cal. of 5 leaves, or 5-partite.*

44. **LINUM.** Pet. 5, entire. Germen and Caps. globose, mucronate, with 10 valves, 10 cells, and 10 seeds. p. 73.

45. SPERGULA. Pet. 5, entire. Germen and Caps. 1-celled, many-seeded. p. 145.  
 46. CERASTIUM. Pet. 5, bifid. Germen and Caps. 1-celled, many-seeded. p. 70.

\*\*\* *Stam. and petals inserted upon the calyx.*

47. SIBBALDIA. Cal. in 10 alternately large and small segments. Achenes 5, in the bottom of the calyx. p. 125.

Ord. VI. HEXAGYNIA. 6 styles.

48. DROSERA. Cal. 5-cleft. Pet. 5. Caps. 1-celled, 3-valved, many-seeded. — Leaves clothed with glandular hairs. p. 50.

Ord. VII. POLYGYNIA. Many styles.

49. RANUNCULACEÆ. Stam. inserted upon the receptacle, free from the calyx. Cal. leaves distinct. p. 3.  
 50. SIBBALDIA. Stam. inserted upon the calyx. Cal. 10-cleft. p. 125.

CLASS VI. HEXANDRIA. 6 stamens, equal in height.

Ord. I. MONOGYNIA. 1 style.

\* *Flowers complete, having a double perianth (Cal. and Cor.). Dicotyledonous plants. Leaves netted-veined.*

1. BERBERIS. Cal. of 6 deciduous leaves. Pet. 6, each with 2 glands at the base. Berry 2—3-seeded. p. 14.  
 2. FRANKENIA. Cal. of 1 piece, tubular. Pet. 5, free from the calyx. Stamens mostly alternate with the petals. Caps. 1-celled, many seeded. p. 52.  
 3. LYTHRACEÆ. Cal. of 1 piece. Pet. 6, inserted upon the calyx. Stam. alternate with the petals. p. 139.  
 4. PRIMULACEÆ. Cor. monopetalous, rotate, 6-partite, with the stamens inserted on it and opposite to its lobes.—(TRIEN-TALIS and LYSIMACHIA.) p. 328.

\*\* *Perianth single, superior, petaloid. Monocotyledonous plants. Leaves parallel-veined.*

5. AMARYLLIDACEÆ. Flowers from a spathe, but not upon a spadix. p. 429.

\*\*\* *Perianth single, inferior.*

† *Stipules none.*

6. ACORUS. Flowers arranged closely upon a thick spadix. Perianth of 6 coloured scales. p. 463.

7. LILIACEÆ. Flowers not upon a spadix. Perianth petaloid, deciduous or marcescent, never coriaceous or hard when withered. p. 432.
8. GAGEA. Flowers corymbose, not upon a spadix. Perianth of 6 persistent coloured (yellow) leaves. Stam. glabrous. Anthers erect. p. 442.
9. NARTHECIUM. Flowers racemose, not upon a spadix. Perianth of 6 persistent (yellow) leaves, somewhat coriaceous and at length hardened. Filaments woolly. Seeds with an appendage at each end. p. 455.
10. JUNCACEÆ. Flowers not upon a spadix. Perianth dry and glumaceous, of 6 pieces. p. 446.
11. PEPLIS. Flowers axillary, not upon a spadix. Perianth herbaceous, campanulate, with 6 large and 6 small teeth. — Dicotyledonous plants with opposite leaves. p. 140.

†† *Leaves with sheathing stipules. Dicotyledonous plants. Leaves netted-veined.*

12. POLYGONUM. Flowers not upon a spadix. Perianth coloured, 5-cleft, — Leaves alternate. p. 353.

Ord. II. DIGYNIA. 2 styles.

18. OXYRIA. Perianth single, of 4 leaves, the 2 inner ones a little larger than the 2 outer. Achene with a broad membranaceous margin. p. 360.

Ord. III. TRIGYNIA. 3 styles.

\* *Perianth single. Leaves alternate, netted-veined, with sheathing stipules.*

14. RUMEX. Perianth of 6 leaves, the 3 inner afterwards enlarged and covering a triquetrous achene. Stigmas multifid. p. 357.

\*\* *Perianth single. Leaves alternate or all radical, simple-veined, without stipules.*

15. TOFIELDIA. Perianth 6-parted with a small 3-partite involucre. Styles short. Caps. 3—6, united up to the middle, many-seeded. p. 445.
16. SCHEUCHZERIA. Perianth of 6 leaves. Anthers elongated. Styles short. Caps. 3, inflated, 2-valved; 1—2-seeded. p. 459.
17. TRIGLOCHIN. Perianth of 6 concave deciduous leaves. Anthers lodged in the leaves of the perianth. Styles very short. Caps. 3—6, 1-seeded, united by a longitudinal column, from which they usually separate at the base. p. 458.
18. COLCHICUM. Perianth funnel-shaped, very long; limb campanulate, 6-parted, petaloid. Styles very long. Caps. 3, united at the base. p. 444.



\*\*\* *Perianth double. Leaves opposite.*

19. **ELATINE.** Cal. of 3 leaves, herbaceous. Pet. 3, coloured. p. 53.

Ord. IV. **HEXAGYNIA.** 6 styles.

20. **ACTINOCARPUS.** Germens and fruits combined at the base, spreading in a radiated manner, 2-seeded. p. 456.

Ord. V. **POLYGYNIA.** *Many styles.*

21. **ALISMA.** Achenes many, distinct, aggregated upon the receptacle, 1-seeded. p. 457.

## CLASS VII. HEPTANDRIA. 7 stamens.

Ord. I. **MONOGYNIA.** 1 style.

1. **PRIMULACEÆ.** Cor. monopetalous, in 7 deep segments, regular and flat. Stam. opposite to the divisions of the corolla. Caps. 1-celled. Seeds attached to a globular free central receptacle — (**TRIENTALIS** and **LYSIMACHIA**). p. 328.

## CLASS VIII. OCTANDRIA. 8 stamens.

Ord. I. **MONOGYNIA.** 1 style.

\* *Perianth double, inferior.*

1. **ACER.** Cal. 5-cleft. Pet. 5. Germen 2-lobed, 2-seeded. Caps. 2, united at the base, each with a long winged membrane (*samara*), 1—2-seeded. p. 81.
2. **CHLORA.** Cal. of 8 segments, in a single row. Cor. of 1 piece, nearly rotate: the stamens alternate with its lobes. Germen 1-celled. Stigma 2—4-cleft. Caps. many-seeded. p. 268.
3. **PRIMULACEÆ.** Cal. 8-partite, in a single row. Cor. monopetalous, rotate, 8-partite, with the stamens inserted on and opposite to its lobes — (**TRIENTALIS** and **LYSIMACHIA**). p. 328.
4. **MONOTROPA.** Cal. and cor. of 4 pieces each. Germen 4-celled, many-seeded. — Leaves none. p. 261.
5. **ERICACEÆ.** Cal. of 4 leaves or deeply 4-cleft, sometimes with 4 similar outer pieces. Cor. of one piece. Stigma entire. Germen 4-celled. p. 254.

\*\* *Perianth double, superior.*

6. **VACCINIUM.** Cor. of one piece, 4-cleft. p. 251.
7. **ONAGRACEÆ.** Petals 4. p. 134.

\*\*\* *Perianth single, inferior.*

8. *DAPHNE*. Perianth usually coloured, 4-cleft, bearing the stamens. Germen 1-seeded. p. 361.  
 9. *MONOTROPA*. Perianth of 4 pieces, with as many external alternating bracteas. Stam. free from the perianth. Germen 4-celled, many-seeded. — Leaves none. p. 261.

Ord. II. *DIGYNIA*. 2 styles.

10. *POLYGONUM*. Perianth single, inferior, coloured, 5-parted. Germen 1-seeded. — Leaves alternate, with sheathing stipules. p. 353.  
 11. *SCLERANTHUS*. Perianth single, inferior, urceolate, contracted at the mouth; tube hard and coriaceous; limb 4-cleft. Germen 1-seeded. — Leaves opposite, without stipules. p. 353.  
 12. *CHRYSOPLENIUM*. Perianth single, half-superior, spreading. Germen many-seeded. — Leaves without stipules. p. 156.

Ord. III. *TRIGYNIA*. 3 styles.

13. *POLYGONUM*. Perianth single, inferior, in 5 deep, coloured, persistent segments. Fruit a 1-seeded achene. p. 353.

Ord. IV. *TETRAGYNIA*. 4 styles.

14. *PARIS*. Perianth inferior, of 8 leaves; 4 inner very narrow. Cells of the anthers 2, fixed one on each side of the middle of a subulate filament. Berry 4-celled. p. 432.  
 15. *ADONIS*. Cal. half-superior, 3-cleft. Cor. 4-cleft. Anthers terminal, 1-celled. Berry 4-celled. p. 181.  
 16. *ELATINE*. Cal. inferior, of 4 pieces. Pet. 4. Germen 4-celled. Caps. 4-valved. p. 53.  
 17. *MCENCHIA*. Cal. inferior of 4 pieces. Pet. 4. Germen 1-celled. Caps. opening by 8 teeth at the top. p. 70.

CLASS IX. *ENNEANDRIA*. 9 stamens.Ord. I. *MONOGYNIA*. 1 style.

1. *PRIMULACEÆ*. Perianth double. Cal. 9-parted. Cor rotate 9-parted. Caps. 1-celled, several-seeded. p. 328.

Ord. II. *HEXAGYNIA*. 6 styles.

2. *BUTOMUS*. Perianth single, coloured, 6-parted, inferior. Caps. 6, many-seeded. p. 455.

CLASS X. DECANDRIA. 10 *stamens*.Ord. I. MONOGYNIA. 1 *style*.\* *Germen superior*.† *Fruit with a long beak, its cells 1-seeded. Stam. conniving into a tube.*

1. GERANIUM. Fruit with a long beak. p. 82.

†† *Fruit without a beak, its cells many-seeded. Stam. distant.*

2. MONOTROPA. Perianth single, of 5 leaves, cucullate at the base (petals?), with as many alternating bracteas (cal.-leaves?). Anthers 1-celled, 2-lipped. — Leaves none. p. 261.
3. PYROLACEÆ. Cal. 5-cleft. Pet. 5, sometimes connected at the base. Anthers opening with 2 pores. Seeds chaffy. — Leaves mostly radical. p. 260.
4. ERICACEÆ. Cal. deeply 5-cleft. Cor. of 1 piece, ovate or campanulate, 5-cleft. Seeds not chaffy. — Shrubby, leafy plants. p. 254.

\*\* *Germen inferior*.

5. VACCINIUM. Cor. of 1 piece. p. 251.

Ord. II. DIGYNIA. 2 *styles*.\* *Perianth single*.

6. POLYGONUM. Perianth inferior, 5-parted, coloured. Germen 1-seeded. — Leaves alternate with sheathing stipules. p. 353.
7. SCLERANTHUS. Perianth inferior, of 1 piece, contracted at the mouth; limb 5-cleft. Germen 1-seeded. — Leaves opposite, without stipules. p. 353.
8. CHRYSOSPLENIUM. Perianth half-superior, limb somewhat coloured, 5-cleft. Germen many-seeded. Caps. with 2 beaks. p. 156.

\*\* *Perianth double. Petals 5.*

9. SAXIFRAGA. Cal. superior, or inferior, or half-superior, in 5 segments. Pet. sessile. Caps. sessile, with 2 beaks, 2-celled. p. 151.
10. CARYOPHYLLACEÆ. Cal. inferior, of one piece, 5-toothed. Pet. with long claws. Caps. stalked. p. 54.

Ord. III. TRIGYNIA. 3 (or sometimes 4) *styles*.

11. POLYGONUM. Perianth single, petaloid. Germen sessile, 1-seeded, triquetrous. — Leaves alternate, with sheathing stipules. p. 353.
12. CARYOPHYLLACEÆ. § *SILENEÆ*. Perianth double. Cal. of 1-piece, 5-toothed. Germen stalked, many-seeded. — Leaves opposite, without stipules. pp. 54, 55.
13. CARYOPHYLLACEÆ. § *ALSINEÆ*. Perianth single or double. Cal. 5-parted. Germen sessile, many-seeded. — Leaves opposite, without stipules. pp. 54, 62.

14. SPERGULARIA. Perianth double. Cal. 5-parted. Germen sessile, many-seeded. — Leaves opposite, with membranaceous stipules. p. 144.

Ord. IV. PENTAGYNIA. 5 (or sometimes 10) styles.

\* *Germen superior, distinct, 5—10 in each flower.*

15. SIBBALDIA. Cal. in 10 alternately large and small segments. Pet. 5, and the stam. inserted into the mouth of the calyx. Achenes 5—10, without a gland at their base. p. 125.  
16. COTYLEDON. Cal. 5-parted. Cor. of 1 piece, tubular, 5-cleft, inserted at the base of the germen. Caps. 5, each with a nectariferous scale or gland at its base. p. 146.  
17. SEDUM. Cal. in 5 (sometimes 4—8) deep segments, often resembling the leaves. Pet. 5, patent, inserted at the base of the germen. Caps. 5, each with a nectariferous scale at its base. p. 147.

\*\* *Germen superior, solitary in each flower.*

18. PARIS. Perianth of 10 leaves; 4 inner ones very narrow. Anther-cells attached near the middle of the filament. Germen 5-celled. p. 432.  
19. OXALIS. Cal. 5-parted. Pet. 5, often united by the bases of their claws. Anthers terminal. Germen 5-celled. Seeds with an elastic skin. — Leaves alternate. p. 87.  
20. SPERGULA. Cal. 5-leaved. Pet. 5. Germen 1-celled. — Leaves opposite, with membranaceous stipules. p. 145.  
21. CARYOPHYLLACEÆ. § ALSINEÆ. Cal. 5-leaved. Germ. 1-celled. — Leaves opposite, without stipules. pp. 54, 62.  
22. CARYOPHYLLACEÆ. § SILENEÆ. Cal. monophyllous, with 5 teeth. Pet. clawed. — Leaves opposite without stipules. pp. 54, 55.

\*\*\* *Germen inferior.*

23. ADOXA. Perianth double. Anthers 1-celled. p. 181.

Class XI. DODECANDRIA. 12 (to 18) stamens.

Ord. I. MONOGYNIA. 1 style.

1. ASARUM. Perianth single, 3-cleft, superior. p. 363.  
2. LYTHRUM. Cal. inferior, tubular, with 12 teeth alternately smaller. Pet. 6, inserted upon the calyx. p. 139.

Ord. II. DIGYNIA. 2 styles.

3. AGRIMONIA. Cal. turbinate, covered with hooked bristles, 5-cleft, inferior. Pet. 5, inserted upon the calyx. p. 127.

## Ord. III. TRIGYNIA. 3 styles.

4. RESEDA. Cal. 4-6-parted. Pet. more or less divided and unequal. Styles entire. Caps. of 1 cell, open at the top, with many seeds attached to its wall. p. 43.
5. EUPHORBIA. Perianth (a true involucre) single, campanulate. Styles bifid. Caps. 3-celled, with 3 seeds attached to the axis. p. 366.

## Ord. IV. DODECAGYNIA. Styles variable, 4—12 or more.

6. SEMPERVIVUM. Cal. inferior, 12-cleft. Pet. 12, entire, regular. Caps. 12, distinct.—Stipules none. p. 147.
7. POTENTILLA. Cal. inferior, 8—10-cleft, the segments alternately smaller. Pet. 4—5, entire or notched, regular, inserted upon the calyx. Achenes 4—18, distinct.—Leaves with stipules adhering to the petiole. p. 122.
8. STRATIOTES. Perianth superior, 6-parted; 3 outer segments herbaceous, 3 inner petaloid. Germ. 6-celled. p. 412.

## CLASS XII. ICOSANDRIA. 20 or more stamens placed on the calyx.

1. ROSACEÆ. Flowers regular. Cal. 4—5- or 8—10-cleft. —Leaves with stipules. p. 114.
2. STRATIOTES. Perianth 6-parted, regular; 3 outer segments herbaceous, 3 inner petaloid. Germen inferior, 6-celled.—Floating plants. p. 412.

## CLASS XIII. POLYANDRIA. Many stamens inserted upon the receptacle (free from the calyx and petals).

## Ord. I. MONOGYNIA. 1 style.

\* Flowers irregular.

1. DELPHINIUM. Cal. coloured, upper leaflet produced at the base into a spur. Pet. 4; 2 upper ones with appendages included within the spur. p. 12.

\*\* Flowers regular. Petals 4.

2. PAPAVERACEÆ. Cal. of 2 caducous leaves. Fruit a capsule or pod. p. 15.
3. ACTÆA. Cal. of 4 caducous leaves. Berry 1-celled.—p. 13.

\*\*\* Flowers regular. Petals 5.

4. HELIANTHEMUM. Cal. of 3 equal leaves, or 5 of which 2 are exterior and smaller; larger ones twisted in bud. p. 44.
5. TILIA. Cal. 5. partite; leaves similar, valvate in bud. p. 77.

\*\*\*\* *Flowers regular. Petals numerous.*

6. NYMPHÆACEÆ. p. 14.

Ord. II. PENTAGYNIA. *Styles variable, 2—6.*

7. STRAMOTES.<sup>1</sup> Germen inferior, 6-celled. p. 412.
8. RESEDA. Flowers irregular. Germen superior, solitary, 1-celled, soon open at the top between the short styles. Seeds attached to 3, 4 parietal receptacles. p. 43.
9. HYPERICUM. Flowers regular. Germen superior, solitary, closed at the top.—Leaves opposite. p. 78.
10. RANUNCULACEÆ. Germens superior, several (3—6), sometimes united below, each 1-celled.—Leaves alternate. p. 3.

Ord. III. POLYGYNIA. *Many styles.*

11. RANUNCULACEÆ. p. 3.

CLASS XIV. DIDYNAMIA.<sup>2</sup> *4 stamens; 2 longer than the other two.*

Ord. I. GYMnosPERMIA.<sup>3</sup> *Germen or fruit deeply 4-lobed, or apparently of 4 naked seeds. Style from between the lobes.*

1. LABIATÆ. p. 305.

Ord. II. ANGiosPERMIA.<sup>4</sup> *Germen entire, or slightly 2-lobed, containing several seeds, with a terminal style.*

2. VERBENA. Germen superior, 4-celled, with 1 seed at the base of each cell. Fruit splitting into 4 achenes.<sup>5</sup> p. 325.
3. LINNÆA. Germen inferior, 3-celled; 2 of the cells with many abortive seeds, one with a perfect seed. Berry dry, 1-seeded. p. 185.
4. OROBANCHACEÆ. Germen and caps. superior, 1-celled. Seeds attached to parietal receptacles.—Leafless plants. p. 284.

<sup>1</sup> We retain *Stratiotes* in the Class *Polyandria*, solely because it has been placed there by Linnæus, Smith, and some others; but the inferior germen shows its place to be *Icosandria*: there are, however, seldom more than 12 stamens with anthers, so that it ought rather to be looked for in *Dodecandria*, and from its being almost always dioecious, Richard long ago removed it to *Diœcia Dodecandria*.

<sup>2</sup> From *dis*, two, and *dynamis*, a power, or superiority of two stamens over the other two.

<sup>3</sup> From *γυμνός*, naked, and *σπέρμα*, the seed.

<sup>4</sup> From *αγγίον*, a vessel or capsule, and *σπέρμα*, the seed.

<sup>5</sup> This genus is placed by Smith and others in the order *Gymnospermia*. It is sometimes described as having the seeds inclosed in one thin membranous evanescent pellicle or capsule; but although we have not seen such, the terminal style appears to indicate the order *Angiospermia*.

5. SCROPHULARIACEÆ. Germen and caps. superior, 2-  
(or rarely 1-) celled. Seeds several, attached to the axis.  
Leafy plants. p. 288.

CLASS XV. TETRADYNAMIA.<sup>1</sup> 6 stamens, 4 long and 2 short.

1. CRUCIFERÆ. p. 20.

CLASS XVI. MONADELPHIA.<sup>2</sup> Filaments combined in one set.<sup>3</sup>

Ord. I. TRIANDRIA. 3 stamens.

1. \*SISTRYNCHIUM. p. 426.

Ord. II. PENTANDRIA. 5 perfect stamens.

2. GERANIACEÆ. Style 1. Fruit beaked, separating at the  
base into 5, 1-seeded capsules, each with a long awn. p. 82.  
3. LINUM. Style 5. Fruit not beaked, 10-valved, 10-seeded.  
p. 73.

Ord. III. DECANDRIA. 10 stamens.

4. GERANIUM. Cor. of 5 regular petals. Style 1. Fruit beaked,  
separating at the base into 5, 1-seeded capsules, each with a  
long naked awn. p. 82.  
5. OXALIS. Cor. of 5 regular petals. Styles 5. Fruit 5-celled, not  
beaked. p. 87.  
6. LEGUMINOSÆ. Cor. irregular, papilionaceous. Style 1.  
Legume 1-celled. p. 92.

Ord. IV. POLYANDRIA. Many stamens.

7. MALVACEÆ. Cal. double. Anthers 1-celled. p. 75.

CLASS XVII. DIADELPHIA.<sup>4</sup> Filaments combined in two sets.

Ord. I. HEXANDRIA. 6 stamens.

1. FUMARIACEÆ. Cal. of 2 small deciduous leaves. Pet. 4,  
one of them gibbous or spurred at the base. p. 18.

<sup>1</sup> From τετρας, four, and δυναμις, a power, or superiority in length of four over the other two stamens.

<sup>2</sup> From μᾶνος, one, and ἀδελφες, brotherhood; one united set of stamens.

<sup>3</sup> In *Erodium* and *Geranium* the union of the filaments takes place only at the very base, and is with difficulty perceived.

<sup>4</sup> From δις, two, and ἀδελφες, brotherhood, stamens in two sets.

Ord. II. OCTANDRIA. 8 *stamens*.

2. **POLYGALA.** Cal. of 5 leaves, 2 of them wing-shaped and coloured. Pet. combined by the claws with their filaments, the lower one keeled. Capsule compressed, 2-celled, 2-seeded. p. 52.

Ord. III. DECANDRIA. 10 *stamens*.

3. **LEGUMINOSÆ.** Flowers papilionaceous. p. 92.

CLASS XVIII. POLYADELPHIA.<sup>1</sup> *Filaments combined in more than two sets.*Ord. I. POLYANDRIA. *Many stamens*.

1. **HYPERICUM.** Cal. 5-partite or 5-leaved, inferior. Pet. 5. Stam. inserted on the receptacle. p. 78. \*

CLASS XIX. SYNGENESIA.<sup>2</sup> *Anthers united into a tube. Flowers compound (several together on the same receptacle, and within the same involucre.*

1. **COMPOSITÆ.** p. 196.

CLASS XX. GYNANDRIA.<sup>3</sup> *Stamens situated upon the style or column, above the germen.*Ord. I. MONANDRIA; *one stamen*; and Ord. II. DIANDRIA, *two stamens*.

1. **ORCHIDACEÆ.** Perianth 6-partite, irregular. Germen 1-celled. — Leaves simply veined. p. 413.

Ord. III. HEXANDRIA. 6 *stamens*.

2. **ARISTOLOCHIA.** Perianth tubular, oblique. Germen 6-celled. — Leaves netted-veined. p. 363.

<sup>1</sup> From πολυς, *many*, and ἀδελφος, *many sets of stamens*.

<sup>2</sup> From συγγινησις, implying union of the anthers.

<sup>3</sup> From γυνη and ανη, implying a union of the stamen and pistil.



CLASS XXI. MONŒCIA.<sup>1</sup> *Stamens and pistils in separate flowers on the same plant.*

Ord. I. MONANDRIA. 1 stamen.

1. EUPHORBIA. Involucre of 1 piece, including several barren flowers and 1 fertile. Perianth none, or a very minute one to the fertile flower. Germen 3-lobed. Styles 3, cleft. Caps. 3-seeded. p. 366.
2. CALLITRICHE. Bracteas 2 or none. Perianth none. Germen solitary, 4-lobed, indehiscent, with 4, 1-seeded cells. Styles 2, simple. p. 370.
3. ZANNICHELLIA. Involucre, spatha, and spadix none. Perianth of barren fl. none, of fertile single, of 1 leaf. Germens 4 or more, each with 1 undivided style. p. 472.
4. ZOSTERA. Perianth none. Stamens and pistils inserted alternately in 2 rows upon one side of a thin flat spadix inclosed within a foliaceous spatha. Anthers sessile. Style bifid. Fruit dry. p. 472.
5. ARUM. Perianth none. Stamens inserted about the middle, pistils on the lower part of a thick rounded spadix which is enveloped by a spatha convolute at the base. Fruit fleshy, many-seeded. p. 462.

Ord. II. DIANDRIA. 2 stamens.

6. CALLITRICHE. Flowers solitary. Fruit naked, 4-lobed, 4-seeded. Styles 2, simple. — Leaves opposite, sessile. p. 370.
7. LEMNA. Spadix 0. Spatha urceolate, membranaceous, inclosing one barren and one fertile flower. Ovary 1-celled. Style and stigma 1. — Minute floating, frondose plants. p. 464.
8. CAREX. Flowers in spikes. Fruit 1-seeded, contained within an urceolate membranaceous perigynium. Style 1, with 2, 3 stigmas. — Leaves alternate, sheathing. p. 486.

Ord. III. TRIANDRIA. 3 stamens.

9. CYPERACEÆ. Flowers in spikes, subtended by glumes. Achenes with 1 style and 2, 3 stigmas. — Leaves parallel-veined. p. 474.
10. TYPHACEÆ. Flowers in spikes or capitate, without glumes. Pericarps indehiscent, with 1 style and stigma. — Leaves parallel-veined. p. 460.
11. AMARANTHUS. Perianth single, deeply 3-partite. Styles 2, 3. Utricle of 1 cell, bursting all round transversely, 1-seeded. — Leaves netted-veined. p. 342.

Ord. IV. TETRANDRIA. 4 stamens.

12. LITTORELLA. Barren fl. : Cal. 4-leaved. Cor. 4-fid, scarious.

From *μῆνος*, one, and *οἶκος*, a house.

- Stam. much longer than the corolla. — Fertile fl. : Cal. 0 (unless 3 bracteas be so called). Cor. urceolate. Style very long. Fruit 1-seeded. — Leaves radical. p. 339.
13. *ALNUS*. Flowers all in cylindrical catkins. — Barren fl. : Scale of the catkin 3-lobed, with 3 flowers. Perianth single, 4-partite. — Fertile fl. : Scale of the catkin subtrifid, with 2 flowers. Perianth 0. Styles 2. Fruit compressed, 2-celled. — Trees. p. 380.
14. *MYRICA*. Flowers all in cylindrical catkins; scales entire, each with a single flower. Perianth none. Germen 1-celled, 1-seeded. Styles 2. Fruit globose. — Shrubs. p. 378.
15. *BUXUS*. Flowers clustered, axillary. Perianth single, of 4 leaves, 2 opposite ones smaller, with 1—3 bracteas at the base. Styles 3. Caps. with 3 beaks, 3-celled, 6-seeded. — Trees or shrubs. p. 369.
16. *PARIETARIA*.<sup>1</sup> Flowers clustered, axillary. Perianth single, campanulate or tubular, 4-cleft. Style simple. Stigma penicillate. Achene 1-seeded. — Herbaceous plants with leafy stems. p. 374.
17. *URTICA*. Flowers in spikes or clustered. Perianth single, of the barren flowers 4-leaved, of the fertile 2-leaved. Stigma sessile. Achene 1-seeded. — Herbaceous plants, with leafy stems. p. 373.
18. *ERIOCAULON*.<sup>1</sup> Flowers collected into a compact, scaly, stalked head. Perianth single, diaphanous. — Barren flowers in the centre. Perianth 4-cleft, the inner segments united nearly to their summit. — Fertile flowers in the circumference. Perianth deeply 4-partite. Style 1. Stigmas 2. Caps. 2-celled; cells 1-seeded. — Leaves all radical. p. 445.

Ord. V. *PENTANDRIA*. 5 stamens.

19. *XANTHIUM*. Barren fl. : Involucre of few scales, with many small capitate flowers seated upon a common receptacle. Perianth single, obovate, 5-toothed. Anthers terminating a tube, which is inserted into the base of the perianth. — Fertile fl. : Involucre of 1 piece, prickly, 2-beaked, entirely inclosing two 1-seeded pistils, without a perianth. p. 245.
20. *ATRIPLEX*. Perianth single, herbaceous, of the barren flowers 5-partite, of some or all the fertile 2-leaved. Styles 2. Utricle superior, indehiscent, 1-seeded. p. 347.

Ord. VI. *POLYANDRIA*. 6 stamens or more.

\* *Flowers not in catkins.*

† *Flowers destitute of spatha and spadix.*

‡ *Stipules none.*

21. *CERATOPHYLLUM*. Flowers axillary. Perianth (an involucre?)

<sup>1</sup> Usually placed in *Monœcia Hexandria*; but the only British species has 4 stamens, and the other parts of the flower are in a binary ( $\frac{2}{2}$ ), not ternary ( $\frac{3}{3}$ ), proportion.

single, inferior, multipartite. Stam. 16—20. Germen 1, superior. Style filiform and stigma simple. Fruit indehiscent, 1-seeded. p. 371.

22. **MYRIOPHYLLUM.** Flowers axillary or in a lax spike. — Barren fl. : Cal. inferior, of 4 leaves. Pet. 4, deciduous. Stam. 8. — Fertile fl. : Cal. of 4 leaves. Pet. 4. Germen inferior. Stigma 4, sessile. Fruit splitting into 4 achenes. p. 138.

23. **SAGITTARIA.** Flowers solitary, peduncled. Perianth of 6 leaves ; 3 outer herbaceous, 3 inner petaloid. Stam. numerous. Germens very numerous, collected into a head, each with one style and stigma. Achenes compressed. p. 458.

†† *Leaves with stipules adhering to the petiole.*

24. **POTERIUM.** Flowers collected into a head, upper ones fertile. Perianth single; of barren fl. in 4 deep segments, of fertile fl. tubular, and contracted at the mouth with 4 deciduous teeth. Stam. 30—40; filaments very long, flaccid. Germens 2. Stigmas tufted. Achenes 2, invested with the hardened perianth. p. 126.

†† *Flowers with a spathe and spadix.*

25. **ARUM.** Spatha of 1 leaf, convolute at the base. Perianth 0. Spadix thick, naked above, with germens at its base and sessile stamens near the middle. Berry 1-celled, many-seeded. p. 462.

\*\* *Barren flowers in catkins or lax spikes.*

26. **CUPULIFERÆ.** Fertile fl. solitary or aggregated or spiked. Perianth, when present, adhering to the rounded germen. Fruit solitary, or several together within a coriaceous or leafy involucre, not winged. p. 401.
27. **BETULA.** Fertile flowers in cylindrical catkins. Germen and fruit compressed, winged, not contained within an involucre. p. 379.

Ord. VII. **MONADELPHIA.** *Stamens united in one set.*

28. **XANTHIUM.** Barren fl. capitate, seated upon a common receptacle. Perianth single, 5-toothed. Filaments united into a compact tube, inserted into the bottom of the perianth, and bearing 5 anthers at the summit. — Fert. fl. : Involucre of 1 piece, prickly, 2-beaked, inclosing 2, 1-seeded pistils without a perianth. Stigmas protruded. p. 245.
29. **PINUS.** Perianth 0. — Barren fl. in crowded racemose catkins; the scales peltate, bearing 2, 1-celled sessile anthers. — Fertile fl. in an ovate catkin; its scales closely imbricated, 2-flowered, afterwards hardened and forming a cone (*strobilus*). Pericarp none (except the scales of the cone). Seeds terminated by a long winged appendage, placed by pairs on the upper surface of each scale. p. 406.

CLASS DICECIA.<sup>1</sup> *Stamens and pistils in separate flowers and on different plants.*

Ord. I. DIANDRIA. *2 or sometimes 1 stamen.*

1. **SALIX.** Scales of the catkin single-flowered, imbricated, with 1—2 nectariferous glands at the base. Perianth 0. Stigmas 2, often cleft. Caps. 1-celled, 2-valved, many-seeded. Seeds comose. p. 381.

Ord. II. TRI-PENTANDRIA. *3—5 stamens.*

\* *Sterile flowers not in catkins, or with a perianth besides the scale of the catkin.*

2. **EMPETRUM.** Perianth and bracteas of many imbricating scales of which the 3 inner are often regular, spreading, and petaloid. Filaments 3, long, inserted under the germen. Germen superior, globose. Style short. Stigma dilated, peltate, rayed. Fruit fleshy, 6—9-seeded. p. 364.
3. **RUSCUS.** Perianth single, of 6 leaves. Filaments combined into a tube, bearing 3 anthers at the summit. Style 1, surrounded by a tubular nectary. Stigma 1. Germen superior, 3-celled, 6-seeded. Fruit fleshy. p. 436.
4. **VALERIANA.** Cor. monopetalous. Stamens 3, upon the corolla. Germen inferior. Style 1. Stigma 3-fid. Fruit dry, 1-seeded, crowned with the calyx expanded into a pappus. p. 192.
5. **VISCUM.** Cal. obsolete. Pet. 4, of barren fl. ovate, fleshy, united at the base, and bearing each a single anther, adnate with the upper surface; of fertile fl. very minute. Germen inferior. p. 183.
6. **RHAMNUS.** Perianth double. Cal. urceolate 4-cleft. Pet. 4. Stam. 4, opposite to the petals; filaments inserted upon the throat of the calyx, ovary superior. p. 91.
7. **HIPPOPHAE.** Barren fl. collected into a small sort of catkin, each scale bearing a flower. Perianth single, of 2 roundish nearly distinct pieces. Anthers 3, linear, sessile. — Fertile fl. solitary. Perianth single, tubular, cloven at the summit. Germen superior. p. 377.
8. **URTICA.** Perianth single; of the barren fl. 4-leaved, of the fertile 2-leaved. Stam. 4. Stigma 1, sessile. Achene superior. p. 373.
9. **HUMULUS.** Barren fl. solitary. Perianth single, of 5 leaves. Stam. 5. Anthers with 2 pores at the extremity. — Fertile fl. in catkins, with large persistent concave entire scales. Perianth 0. Germen superior. Styles 2. Achene 1-seeded. p. 375.
10. **RIBES.** Perianth double. Pet. 5, inserted upon the calyx. Stam. 5. Germen inferior, 1-celled. Style bifid. Berry many-seeded. — Shrubs. p. 50.

<sup>1</sup> From *dis*, two, and *anac*, a house.

11. **BRYONIA.** Perianth double. Cor. 5-cleft. Stam. of 3 filaments and 5 anthers. Germen inferior. Style 3-fid. Berry several-seeded. — Herbaceous plants with tendrils. p. 141.

**\*\* Barren and fertile flowers in catkins. Perianth 0.**

12. **MYRICA.** Stam. 4. Styles 2. Scales of the fertile catkin at length somewhat fleshy, and adhering to the fruit, which is drupaceous and 1-seeded. p. 378.
13. **SALIX.** Stam. 3—5. Styles bifid. Scales of the ovary always dry or herbaceous, and free from the fruit, which contains many comose seeds. p. 381.

**Ord. III. HEXANDRIA. 6 stamens.**

14. **TAMUS.** Perianth single, in 6 deep equal segments. Germen inferior. Stigmas 3. Berry 3-celled. p. 431.
15. **RUMEX.** Perianth single, the 3 inner ones of the fertile fl. afterwards enlarged, and covering the 1-seeded achene. Germen superior. p. 357.

**Ord. IV. POLYANDRIA. 8 stamens or more.**

**\* Flowers in catkins.**

16. **PORULUS.** Anthers 8—30, arising from a turbinate, oblique, entire, single perianth. Caps. superior, 2-valved, with many comose seeds. p. 399.

**\*\* Flowers scattered.**

17. **SEDUM.** Cal. 4-partite. Pet. 4. Glands 4, emarginate. Stam. 8. Germens 4. p. 147.
18. **MERCURIALIS.** Perianth single, 3-partite. Stam. 9—12. Anthers of 2 globose lobes. Germen superior. Styles 2. Caps 2-celled, 2-seeded. p. 365.
19. **CARYOPHYLLACEÆ.** Cal. tubular and 5-toothed, or 5-partite. Pet. 5. Stam. 10. Germen superior, several-seeded, Styles 3—5.—Leaves opposite, without stipules — (**SILENE, LYCHNIS, HONCKENYA**). p. 54.
20. **ROSACEÆ.** Cal. 5—10-cleft. Pet. 5. Stam. numerous, inserted on the calyx. Styles numerous. Achenes or drupes many, superior, seated upon an elevated receptacle. — Leaves alternate, with adnate stipules — (**FRAGARIA** and **RUBUS**). p. 114.
21. **HYDROCHARIDACEÆ.** Flowers spathaceous. Perianth 6-partite, or of 6 pieces: 3 outer herbaceous, 3 inner petaloid. Stam. 9—12, or more. Germen inferior. Styles 3—6. — Floating plants. p. 411.

**Ord. V. MONADELPHIA. Stamens combined in one set.**

**\* Perianth 6-leaved. Flowers not in catkins.**

22. **RUSCUS.** Flowers on the leaves. Style and stigma 1. Berry 3-celled. p. 436.

**\*\* Perianth none. Barren flowers in catkins.**

23. **SALIX.** Fertile fl. in catkins. Style 1. Stigmas 2. Caps. 2-valved, with many comose seeds. p. 381.
24. **JUNIPERUS.** Style and stigma 0. Seeds about 3, inclosed within several fleshy and at length united scales. p. 407.
25. **TAXUS.** Style and stigma none. Seed solitary, bony, contained in a fleshy cup. p. 407.

**Ord. VI. POLYADELPHIA.** *Stamens combined in 3 (or more) sets.*

26. **BRYONIA.** Filaments (or sets of stamens) 3; anthers 5. Fruit inferior, fleshy. p. 141.

**CLASS XXIII. POLYGAMIA.<sup>1</sup>** *Stamens and pistils separated or united, on the same or on different plants, and having the perianth (of some or all) of the pistillate flowers different from that of the sterile ones.*

**Ord. I. MONŒCIA.** *The two kinds of flowers on the same plant.*

1. **ATRIFLEX.** Barren and united fl.<sup>2</sup> Perianth single, 5-partite. Pistillate fl. Perianth single, of 2 valves. Fruit superior, 1-seeded, covered by the enlarged perianth. — p. 347.

**CLASS XXIV. CRYPTOGAMIA.<sup>3</sup>** *Stamens and pistils not evident.*

This class corresponds with the third class of the natural arrangement, **ACOTYLEDONES**, which see, p. 563.

<sup>1</sup> From *πολυς*, *many*, and *γαμος*, in allusion to the stamens and pistils being sometimes separated in the same or in different plants.

<sup>2</sup> The supposed united fl. are by some considered to be only a second kind of pistillate flowers, and to be without fertile stamens, which would remove this genus to **MONŒCIA**.

<sup>3</sup> From *κρυπτος*, *concealed*, and *γαμος*, in reference to the obscure mode of fructification.

## ADDITIONS AND CORRECTIONS.

- Page Line
2. 4. For "BALSAMACEÆ" read "BALSAMINACEÆ."
22. 17. For "BERTERIA" read "BERTEROA."
- 19. For "col." read "cot."
45. 1. For "*Ælandicus*" read "*(Elandicus)*."
47. *Viola pumila*.—With this Mr. Babington, in Bot. Gazette (1850), p. 143, under the name of *V. canina*, conjoins, as a narrow-leaved variety, the *V. lactea* Sm. or *V. lancifolia* Thore; but he keeps distinct what we and most others call *V. lactea* under the name of *V. stagnina* Kit. In our *V. pumila* the spurs of the anthers are usually "three times as long as broad," in *V. stagnina* "not twice as long as broad," — characters, in our opinion, of little value, unless accompanied by a difference of habit.
48. 32. For "like" read "in."
71. 21. After "calyx" add "to twice as long."
73. 15. For "styles mostly 5" read "styles mostly 3."
76. 8. from bottom. After "*M. verticillata* L." add ": E. B. S. t. 2953."
130. 19. After "ad calcem" add "*R. Borreri* Sm.; E. B. S. t. 2723."
140. 16. from bottom. For "TAMARISCACEÆ" read "TAMARICACEÆ."
179. 10. For "Forster" read "Forbes."
203. 24. For "onc entire" read "an outer."
204. 3. After "225" add *Achyrophorus Scop.*
242. 21. Delete "*Matricaria L.*"
254. 19. from bottom. After "ERICACEÆ," add "*Juss.*"
264. 17. After "APOCYNACEÆ" add "*Juss.*"
341. 7. from bottom. After "1—3-seeded" add "1—3 together within a coriaceous or leafy involucre."
- 5. from bottom. After "membranous" add "without an involucre."
342. 14. After "AMARANTHACEÆ" add "*Juss.*"
343. 9. After "CHENOPODIACEÆ" add "*Ventn.*"
359. *Rumex palustris* — Mr. Babington, in Bot. Gazette (1849), p. 297, is of opinion that there are two species under this name: the one, Smith's plant, to which he refers as synonyms *R. maritimus* Curt. and *R. Steirii* Koch; the other *R. palustris* Koch, or *R. limosus* Thuill., to which he refers the "Golden Dock" of Petiver; this last is said to have the leaves all linear lanceolate as in *R. maritimus*, but the whorls distant as in *R. palustris*: to *R. palustris* he attributes root-leaves narrowly lanceolate from a rounded or cordate or slightly decurrent base. No station is, however, now known in this country for *R. limosus*, if such, indeed, was Petiver's plant.
449. 24. and 28. For "*lampocarpus*" read "*lamprocarpus*."
450. 17. For "*lampocarpus*" read "*lamprocarpus*."
472. 27. For "longest-stalked" read "longish-stalked."
480. 21. For "*E. B. t. 1693*" read "*Scirpus E. B. t. 1693*."!
520. 2. For "*E. B. t. 2265*" read "*E. B. t. 2265: Parn. Gr. t. 7.*"

# THE BRITISH FLORA.



## ARRANGEMENT ADOPTED IN THE BRITISH FLORA.

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# BRITISH FLORA.

## CLASS I.

### DICOTYLEDONOUS<sup>1</sup>, OR EXOGENOUS, PLANTS.

Cellular and vascular. *Stem* formed of two distinct portions, *Wood* and *Bark*; the former containing pith in the centre, from which diverge the *medullary rays*, and increasing by new layers on the outside; the latter by new layers within. *Leaves* with the nerves much branched, and the veinlets reticulated. *Flowers* having the parts usually arranged in a quinary or quaternary manner. *Embryo* with two opposite *cotyledons*, rarely more and then verticillate.

#### SUB-CLASS I. THALAMIFLORÆ. (ORD. I.—XXIII.)

*Petals many, distinct, and, as well as the stamens, inserted upon the receptacle (not upon the calyx); hence hypogynous* (from ὑπο, beneath, and γυνή, the pistil).

#### CONSPECTUS OF THE ORDERS.<sup>2</sup>

##### A. *Flowers very irregular.*

##### a. *Leaves with stipules, ovary 1-celled.* s

9. VIOLACEÆ. Stamens 5; anthers with a crest, more or less cohering. Ovary with 3 parietal placentas.

[26. LEGUMINOSÆ. Stamens 10, mono-diadelphous; anthers distinct. Placenta 1, sutural.]

<sup>1</sup> From δις, twice or double, and κοτυληδών the cotyledon.

<sup>2</sup> The orders printed within brackets will be found described at length in some other sub-class, although some genera or species belong in character to the present one. On the other hand, the perigynous and apetalous genera and species will be noticed in the conspectus of some other sub-class. A similar remark applies to all the sub-classes.

b. *Leaves without stipules.*

- 5. FUMARIACEÆ. Stamens 6, diadelphous. Fruit 1-celled.
- 11. POLYGALACEÆ. Stamens 8, diadelphous. Fruit 2-celled.
- 21. BALSAMACEÆ. Stamens 5; filaments distinct; anthers cohering. Fruit 5-celled.
- 7. RESEDACEÆ. Stamens 10 or more, inserted on a glandular irregular disk. Fruit 1-celled, with 8 parietal placentas.
- 1. RANUNCULACEÆ. Stamens numerous, without any conspicuous disk. Fruit of 1—5 follicles, each with one sutural placenta.

B. *Flowers regular, or nearly so.*a. *Stamens 20 or more.*

- 1. RANUNCULACEÆ. Stamens distinct. Carpels 1 or more, sometimes cohering below, each with 1 style and 1 placenta. Leaves alternate.
- 4. PAPAVERACEÆ. Sepals 2, caducous. Petals 4. Style 1. Placentas 2 or more. Leaves without stipules.
- 3. NYMPHÆACEÆ. Sepals 4—6. Petals numerous. Stamens distinct. Style 1. Stigma rayed. Placentas several.
- 8. CISTACEÆ. Sepals 3, twisted in aestivation, with usually 2 outer ones. Petals 5, fugacious. Style 1. Placentas several.
- 18. HYPERICACEÆ. Sepals 5. Petals 5. Styles several (3—5). Leaves opposite, without stipules.
- 17. TILIACEÆ. Sepals 4—5, all in the same whorl and valvate in aestivation. Petals 4—5. Stamens distinct. Style 1. Placentas several. Leaves with stipules.
- 16. MALVACEÆ. Calyx valvate in aestivation. Petals 5. Stamens united into a column. Leaves with stipules.

b. *Stamens 12 or fewer. Calyx tubular.*

- [67. PLUMBAGINACEÆ. Stamens as few as the petals, opposite to them and attached to their claws. Styles 5. Ovary 1-celled, with 1 ovule.]
- 12. FRANKENIACEÆ. Stamens, if as few as the petals, alternate with and free from them. Style 1, 2—3-cleft. Ovules several, attached to 3 parietal placentas.
- 14. CARYOPHYLLACEÆ, § SILENEÆ. Stamens twice as many as the petals. Styles 2—5. Ovules numerous, attached to a central or axile placenta.

c. *Stamens 12 or fewer. Calyx deeply divided, or sepals distinct.*\* *Carpels several, distinct.*

- 1. RANUNCULACEÆ. Carpels very numerous, in several rows.
- [35. CRASSULACEÆ. Carpels in a single row.]

\*\* *Carpels in a single row, solitary, or 2—5 combined.*

† *Ovary 1-celled, with a free central placenta bearing 3 or more ovules. Anthers not opening by recurved valves.*

- [33. PORTULACEÆ. Sepals 2. Petals 5.
- 34. PARONYCHIACEÆ. Sepals and petals 4—5. Leaves with stipules.]
- 14. CARYOPHYLLACEÆ, § ALSINEÆ. Sepals and petals 4—5. Leaves without stipules.

†† *Placentas several, parietal, or cells of fruit 1-seeded. Anthers not opening by recurved valves.*

[31. TAMARICACEÆ. *Placentas 3. Seeds comose.*]

10. DROSERACEÆ. *Placentas 3—4. Seeds not comose.*

6. CRUCIFERÆ. *Placentas 2, or apparently only 1. Style 1. Stamens usually tetradynamous.*

††† *Ovary 1-celled, with 1 placenta. Anthers opening by recurved valves.*

2. BERBERIDACEÆ.

†††† *Ovary with 2 or more cells and axile placentas.*

§ *Petals imbricated in aestivation.*

19. ACERACEÆ. *Style 1, bifid. Fruit 2-celled, 2—4-seeded, winged. Leaves opposite, exstipulate.*

23. STAPHYLEACEÆ. *Stamens 5, inserted below the margin of a large hypogynous disk. Styles 2—3. Ovary and wingless fruit 2—3-celled. Seeds globose, few, bony. Leaves pinnatid, stipuled.*

[37. SAXIFRAGACEÆ. *Stamens 10. Styles 2. Ovary 2-celled. Fruit many-seeded, wingless. Leaves without stipules.*

51. PYROLACEÆ. *Stamens 8—10; anthers opening by pores. Style and stigma 1. Ovary 4—5-celled, many-ovuled. Leaves without stipules.*

52. MONOTROPACEÆ. *Stamens 8—10; anthers opening transversely. Style and stigma 1. Ovary 4—5-celled, many-ovuled. Leaves wanting.]*

13. ELATINACEÆ. *Styles 3—5. Ovary and fruit 3—5-celled. Seeds numerous, cylindrical, with a striated testa. Leaves entire, opposite, stipuled.*

§§ *Petals convolute in aestivation.*

15. LINACEÆ. *Stamens 4—5. Stigmas 3—5. Ovary 3—5-celled. Fruit 6—10-celled, 6—10-seeded. Leaves exstipulate, entire.*

22. OXALIDACEÆ. *Stamens 10. Styles 5. Ovary 5-celled. Seed-coat fleshy, bursting elastically. Leaves alternate, exstipulate.*

20. GERANIACEÆ. *Stamens 10. Style 1. Stigmas 5. Ovary 5-celled. Fruit 5-celled, 5-seeded, with a long beak. Leaves stipuled.*

## ORD. I. RANUNCULACEÆ Juss.

*Calyx* of mostly 5, rarely 3 or 6, pieces or sepals, frequently deformed. *Petals* 5 or more, often deformed, sometimes wanting. *Stamens* usually numerous, rarely as few as the petals, and then alternate with them. *Anthers* adnate, mostly reversed. *Ovaries* 1 or many, distinct or cohering. *Fruit* mostly of several 1-seeded indehiscent *carpels* (*achenes*), or of 1 or more distinct or united *capsules* dehiscing along their inner margin (*follicles*), rarely a *Berry*. *Embryo* straight, in the base of a horny *albumen*. — Herbs or shrubs. *Leaves often divided, with more or less dilated stalks. Acrid and poisonous, some of them eminently so, especially Aconitum.*

\* *Ovaries numerous, short, in several rows, 1-ovuled. Fruit of achenes.*

1. CLEMATIS. Calyx valvate or induplicate in æstivation. Petals 0.
2. THALICTRUM. Calyx imbricated in æstivation. Petals 0. Involucre 0.
3. ANEMONE. Calyx imbricated in æstivation. Petals 0. Involucre 3-leaved, usually distant from the calyx.
4. ADONIS. Petals 5—10, without a nectariferous pore.
5. MYOSURUS. Sepals prolonged at the base. Petals 5, with a nectariferous pore.
6. RANUNCULUS. Sepals not prolonged at the base. Petals with a nectariferous pore.

\*\* *Ovaries elongated, many-ovuled.\* Carpels several-seeded. Stamens numerous.*

† *Stamens not arising from a glandular disk: anthers reversed (extrorse). Fruit of follicles.*

7. CALTHA. Petals 0.
8. TROLLIUS. Petals linear, flat.
- 9<sup>a</sup>. ERANTHIS. Petals small, tubular. Follicles stalked.
9. HELLEBORUS. Petals small, tubular. Follicles sessile.
10. AQUILEGIA. Petals 5, funnel-shaped, with a long spur.
11. DELPHINIUM. Upper sepal spurred at the base. Petals 4, irregular.
12. ACONITUM. Upper sepal helmet-shaped. Petals irregular.

†† *Stamens arising from a glandular disk: anthers introrse. Carpel solitary, baccate.*

13. ACTÆA. Petals 4, irregular.

††† *Stamens arising from a glandular disk: anthers introrse. Follicles 2—5.*

14. PÆONIA. Petals 5—10, larger than the calyx, regular.

\* *Ovaries (and fruit) short, 1-seeded. (Gen. 1—6.)*

### 1. CLÉMATIS Linn. Traveller's Joy.

*Cal.* of 4—6 sepals, with a valvate or induplicate æstivation. *Pet.* 0. *Stamens* and *Styles* numerous. *Achenes* terminated by a long, mostly feathery, awn.—Named from κλημα, the shoot of a vine, which the long branches somewhat resemble.

1. C. *Vitalba* L. (common T.); stem climbing, leaves pinnate, leaflets cordato-ovate inciso-lobate, petioles twining, peduncles rather shorter than the leaves. *E. B.* t. 612.

Hedges; abundant in a calcareous soil, in the middle and south of England. *h.* 6—9. — *Petioles* serve as tendrils. *Flowers* fragrant.

### 2. THALICTRUM Linn. Meadow-Rue.

*Cal.* of 4—5 sepals, imbricated in æstivation. *Cor.* 0. *Stamens*

numerous. *Styles* several. *Achenes* without awns (sessile, or nearly so, ribbed, usually acute at both ends, and *flowers* perfect, in the British species). *Involucre* none.—Named from *σαλλω*, to be green or flourishing.

1. *T. alpinum* L. (*alpine M.*); stem simple nearly leafless, raceme simple terminal, flowers drooping. *E. B.* t. 262.

Mountains in the north of England, Wales, and Scotland, frequent. 4. 6, 7.—*Root-leaves* upon long stalks, biternate; *leaflets* roundish, crenate, or lobed, dark-green. *Stam.* 10—12. *Ovaries* 2—4. *Flowers* few. *Pedicels* in fruit recurved: they are straight in the two following.

2. *T. minus* L. (*lesser M.*); glabrous or slightly pubescent, leaves 3—4-pinnate, leaflets roundish or wedge-shaped trifid and toothed glaucous beneath, panicle diffuse its branches alternate or whorled, flowers mostly drooping. — *a.* glabrous, leaflets roundish. *E. B.* t. 11. — *β.* segments of the leaflets much acuminate. *T. nutans* Desf. — *γ.* *majus*, stem often hollow, leaflets larger and broader. *T. majus* Jacq.: *E. B.* t. 611. — *δ.* slightly pubescent. *T. calcareum* Ball *Bot. Gaz.* i. p. 312.

Dry chalky pastures, in several parts of England. 4. 4, 5. — *Flowers* purple, externally silky, very handsome.

2. *A. nemorósa* L. (*Wood A.*); leaves ternate, leaflets lanceolate lobed and cut, involucre similar to them petiolate, stem single-flowered, sepals 6 elliptical, point of achenes not feathery. *E. B. t.* 355.

Moist woods and pastures, and on high mountains. 4. 3—6. — *Flowers* white, tinged with purple outside.

3. *A. \*Apennína* L. (*Blue Mountain A.*); leaves triternate, segments lanceolate cut and toothed, involucres petiolate ternate and cut, sepals 12—14, point of achenes not feathery. *E. B. t.* 1062.

Wimbledon woods, Surrey; near Harrow; Luton Hoe, Bedfordshire; near Berkhamstead, Essex; and Cullen, Banff. 4. 4. — *Flowers* light and bright blue.

4. *A. \*ranunculoídes* L. (*yellow Wood A.*); leaves ternate, leaflets subtrifid cut and toothed, involucres shortly stalked ternate cut and toothed, sepals 5—6 elliptical, point of achenes not feathery. *E. B. t.* 1484.

Woods, rare; King's Langley, Herts; and Wrotham, Kent. 4. 4. — *Flowers* brightish-yellow.

#### 4. *ADÓNIS* Linn. Pheasant's Eye.

*Cal.* of 5 sepals. *Pet.* 5—10, without a nectary. *Stamens* and *Styles* numerous. *Achenes* without awns. — Name: its deep red colour suggested the idea of its being stained by the blood of *Adonis*.

1. *A. \*autumnális* L. (*Corn P.*); petals concave connivent scarcely longer than the glabrous calyx, achenes reticulated collected into an ovate head, stem branched. *E. B. t.* 308.

Amongst corn, about London, Isle of Wight, Norfolk, Gloucestershire, Glasgow, and Dublin. ☉. 5—7, and partially till autumn. — *Leaves* thrice compound, with linear segments. *Petals* bright scarlet.

#### 5. *MYOSÚRUS* Linn. Mouse-tail.

*Cal.* of 5 sepals, prolonged at the base, imbricated in æstivation. *Pet.* 5, their *claws* tubular (nectariferous). *Stamens* 5. *Achenes* numerous, collected upon a very long columnar receptacle. — Name *μυς*, *μυος*, a *mouse*, and *ουρα*, a *tail*; from the elongated receptacle of the germens or seed-vessels.

1. *M. mínimus* L. (*common M.*) *E. B. t.* 485.

Corn-fields and waste places in England, in a gravelly or chalky soil. North of Ireland. ☉. 4—6. — A small plant, from 2—6 inches in height. *Leaves* erect, narrow, linear-spathulate, fleshy.

*Scapes* slender, bearing a single, small, greenish flower. *Receptacle* of *achenes* at first short, then lengthening to from 1—3 inches.

# 6. RANUNCULUS Linn. Crowfoot, Spearwort.

*Cal.* of 5 (rarely 3) sepals, not prolonged at the base. *Pet.* 5 (rarely many), with a nectary at the base. *Achenes* without awns. [In the pore or nectary of the petals of this, and of *Myosurus*, we observe an affinity with the tubular petals of *Helleborus*, and even of *Trollius*; only, in the two latter, the petals are more altered in shape.] — Named from *Rana*, a *frog*; these plants delighting to grow where frogs abound.

\* *Achenes* conspicuously transversely wrinkled. *Petals* white; nectary without a scale.

1. *R. fluitans* Lam. (*River C.*); stem floating, leaves all submersed capillaceo-multifid, their segments very long and parallel, petals obovate much larger than the calyx, receptacle of fruit hispid. *E. B. S.* t. 2870.

Lakes, rivers, and canals, in deep water. *℥.* 6, 7.

2. *R. circinatus* Sibth. (*rigid-leaved Water C.*); stem floating, leaves all submersed flat roundish capillaceo-multifid their segments spreading all in the same plane, petals obovate much larger than the calyx, receptacle of fruit hispid. *E. B. S.* t. 2869.

Lakes, ponds, and ditches. *℥.* 6—8. — Whatever be thought of the last species we cannot believe this to be distinct from the following; and whenever the segments of a multifid leaf are not in the same plane, they may be regarded as in an accidental or abnormal state.

3. *R. aquatilis* L. (*common Water C.*); stem floating submersed, leaves capillaceo-multifid, their segments spreading in all directions and forming a globular mass, floating leaves trifid or tripartite (occasionally wanting) their lobes cut or crenated, stipule-like appendages of upper leaves adhering to the petiole, petals obovate much larger than the calyx, receptacle of fruit hispid. — *α.* floating leaves present, submersed leaves rarely absent. *E. B. S.* t. 101. — *β.* floating leaves absent. *R. panto-*  
*thrix*, *α.* *De C.*

Lakes, ponds, and ditches. *℥.* *Fl.* Spring and summer. — We have seen no British specimens without the submersed leaves, but they are said to be occasionally wanting abroad; so that this chiefly differs from the next by the larger flowers.

4. *R. tripartitus* DC. (*three-lobed Water C.*); stem floating, submersed leaves wanting or divided into capillary segments spreading in all directions, floating ones tripartite, their lobes



triangular-obovate 2—4-cleft, stipule-like appendages of upper leaves almost free from the petiole, petals oblong (small) as short as or twice as long as the calyx, receptacle of fruit hispid. *E. B. S. t.* 2946.

Shallow ditches near Claremont House, Surrey; *H. Watson*. Haverfordwest, Pembrokeshire; *C. C. Babington*. 4, or ☉? (*Borrer*.) 6, 7. — *Stamens* few, 5—10. *Submersed leaves* always absent in English specimens. In deference to our friend Mr. *Borrer's* opinion, we have kept these three last species distinct: we ourselves, however, are not convinced that the differences hitherto observed are of more importance than to denote *perhaps* permanent varieties: the present one has small flowers and forms the transition to the two next, from which, along with all the preceding, it differs by the hispid receptacle. De Candolle himself was very doubtful as to its claims to rank as a species.

5. *R. cœnósus* Guss. (*Mud C.*); stem creeping or floating, leaves roundish kidney-shaped with 3—5 notched lobes, petals oblong about twice longer than the calyx, receptacle of the fruit glabrous. *R. Lenormandi* *F. W. Schultz*: *E. B. S. t.* 2930.

Shallow water in various places in England; Sussex, Plymouth, Surrey, Needham Forest in Staffordshire, Charnwood Forest in Leicestershire, and head of Coniston Water in Lancashire. Dumfries-shire in Scotland. 4. 6—8. — The *style* is said to be terminal in this species, lateral in the next: this is sometimes true, but is certainly not constant; and we cannot discover any other good grounds for keeping it distinct; although all those who have seen the plant growing appear confident of its being a good species. We do not possess specimens of Gussone's plant, and adopt that name at the suggestion of Mr. *Borrer*.

6. *R. hederáceus* L. (*Ivy C.*); stem submersed and throwing out roots or creeping, leaves roundish kidney-shaped with 3—5 rounded entire lobes, petals (small) narrow scarcely longer than the calyx or sometimes twice as long, stamens 5—12, receptacle of fruit glabrous. *E. B. t.* 2003.

Wet places, shallow pools of water, and where water has stood. 4. *Fl.* throughout the summer. — With regard to this and the five preceding species, M. Seringe, to whom most of them were well known, and who had studied them closely, long ago recorded his decided opinion, that all were mere varieties. We have not found the characters taken from the receptacle to vary, but we dare not assert that it does not, since we know that the hairiness of the achenes of *R. aquatilis* certainly does, and the hairiness is merely a continuation of that of the receptacle.

\*\* *Achenes* not transversely wrinkled. *Petals* white; *nectary* without a scale.

7. *R. \* alpéstris* L. (*alpine white C.*); leaves glabrous, radical ones petiolate orbicular more or less 3—5-lobed, lobes at the

extremity crenate, stem-leaves 1—2 sessile simple linear or deeply divided into 3—5 simple linear segments, stem mostly 1-flowered, petals obcordate. *E. B. t.* 2390.

"By little rills and among rocks on the mountains of Clova, Angus-shire, seldom flowering." *G. Don*, 1809. *¶*. 5. — Stem 3—6 inches high. A very doubtful native: the specimen sent to Smith appears to have been from Don's garden.

\*\*\* *Achenes not transversely wrinkled or obscurely so. Flowers yellow; nectary with a small scale.*

† *Leaves undivided.*

8. *R. Lingua* L. (*great S.*); leaves lanceolate subserrated sessile semiamplexicaul, stem erect glabrous, achenes minutely pitted with a broad ensiform beak. *E. B. t.* 100.

Marshes, sides of lakes, and ditches; not very general. *¶*. 7—9. — Stem 2—3 feet high. *Flowers* large, handsome.

9. *R. ophioglossifolius* Vill. (*Serpent's-Tongue S.*); leaves oblong sessile, lower ones cordato-ovate petiolate, stem erect many flowered, achenes obliquely ovate with a short point margined, the sides tubercled. *E. B. S. t.* 2835.

St. Peter's Marsh, Jersey; *Mr. C. C. Babington*. *¶*. 6. — A very distinct species, allied in the foliage to the following, but in its annual duration and the achenes to *R. hirsutus*. *Flowers* small; heads of fruit large in comparison.

10. *R. Flammula* L. (*lesser S.*); leaves linear-lanceolate nearly entire petiolate, the lower ones ovato-lanceolate, stem decumbent at the base and rooting, achenes minutely pitted or smooth with a short or sometimes subulate point. *E. B. t.* 387. — *β*. much smaller, stem creeping filiform. *R. reptans Lightf. Scot. p.* 289. *t.* 1.

Sides of lakes and ditches, abundant. — *β*. Margins of the Highland lakes, in barren stony places. *¶*. 6—8.

11. *R. \*gramineus* L. (*grassy C.*); leaves linear-lanceolate striated entire, stem erect glabrous, scale of the nectary tubular, achenes irregularly wrinkled with a short recurved point, root fascicled. *E. B. t.* 2306.

"Brought from North Wales by Mr. Pritchard." *With.* *¶*. 5, 6.

12. *R. Ficaria* L. (*Pilewort C., lesser Celandine*); leaves cordate petiolate angular or crenate, sepals 3, petals 9, achenes smooth blunt. *E. B. t.* 584. *Ficaria ranunculoides De C.*

Pastures, woods, bushy places, &c. *¶*. 3—5. — Root consisting of many long fasciculated tubers. *Leaves* petiolate, 2—3 on the 1-flowered stem. *Flowers* glossy, yellow.

†† *Leaves divided. Achenes smooth or wrinkled. Perennial.*

13. *R. auricomus* L. (*Wood C.*); leaves glabrous, radical ones reniform 3-partite and cut, stem-leaves divided to the base into linear subdentate segments, calyx pubescent shorter than the petals, head of fruit globose, achenes downy. *E. B.* t. 624

Woods and coppices, not unfrequent 4. 4, 5.—Not acrid, as most of the other *Crowfoots*.

14. *R. scelerátus* L. (*Celery-leaved C.*); leaves glabrous, radical ones petiolate tripartite, lobes cut very obtuse, upper ones in 3 linear cut segments, calyx glabrous, achenes slightly wrinkled collected into an oblong head, receptacle hairy. *E. B.* t. 681.

Sides of pools and ditches. 4. 5—9.—*Stem* short, succulent, 1—2 feet high. *Lower leaves* very broad and glossy. *Flowers* extremely small, pale yellow.

15. *R. ácris* L. (*upright Meadow C.*); calyx spreading, peduncles rounded (not furrowed), leaves tripartite their segments acute trifid and cut, upper ones linear, achenes and receptacle glabrous. *E. B.* t. 652.

Meadows, pastures, and mountainous situations. 4. 6, 7.

16. *R. répens* L. (*creeping C.*); calyx spreading, flower-stalks furrowed, scions creeping, leaves with 3 petiolated leaflets which are 3-lobed or 3-partite and cut, achenes collected into a globose head glabrous, receptacle hairy. *E. B.* t. 515.

Pastures, too frequent. 4. 5—8.—Well distinguished by its creeping scions, and furrowed peduncles.

17. *R. bulbósus* L. (*bulbous C.*); calyx hairy reflexed, peduncles furrowed, stem upright many-flowered, leaves cut into 3 petiolate leaflets which are 3-lobed or 3-partite and cut, root bulbous, achenes smooth, receptacle hairy. *E. B.* t. 515.

Meadows and pastures, frequent. 4. 5, 6.—*Stem* 1 ft. high, hairy. Lobes of the lower leaves subovate; upper leaves with linear segments.

††† *Leaves divided. Achenes tuberculated or muricated. Annual.*

18. *R. hirsútus* Curt. (*pale hairy C.*); calyx reflexed, stem erect many-flowered hairy, leaves 3-lobed or 3-partite, lobes obtuse cut, root fibrous, achenes margined and tuberculated near the margin. *E. B.* t. 1504. *R. Philonotis Ehrh.*

Meadows and waste ground. ☉. 6—9.—Varying extremely in size. When very small it is *R. parvulus* L.

19. *R. arvénsis* L. (*Corn C.*); calyx spreading, stem erect many-flowered, leaves 3-cleft their lobes generally again 3-cleft

into linear entire or bi-tridentate segments, achenes margined muricated. *E. B.* t. 135.

Corn-fields. ☉. 5—7. — *Achenes* very large and prickly. *Flowers* small, pale yellow. — Said to be extremely injurious to cattle.

20. *R. parviflorus* L. (*small-flowered C.*); stem spreading, leaves hairy 3-lobed and cut, peduncles opposite the leaves, calyx as long as the petals, achenes muricated. *E. B.* t. 120.

Corn-fields about London, Norwich, and in the S. and S. W. of England. Chelmsford. Hackfall. Ormeshead. Cork. Sand-hills between Baldoyle and Howth, Dublin. ☉. 5—8. — Well distinguished by its spreading *stems*, lateral *flower-stalks*, and small narrow *petals*, one or two of which are often wanting.

\*\* *Ovaries* (and fruit) elongated, many-seeded. *Stamens* numerous. (Gen. 7—14.)

### 7. CÁLTHA Linn. Marsh-Marygold.

*Sepals* 5, petaloid. *Pet.* none. *Follicles* 5—10, compressed, spreading, with many seeds. — Named from *καλαθος*, a *cup*, which its flowers resemble.

1. *C. palústris* L. (*common M.*); stem erect rooting or creeping, leaves orbiculari-cordate or reniform crenate, calyx-leaves 5—6 oval deciduous. *E. B.* t. 506. —  $\beta$ . leaves cordato-triangular sharply crenate. *C. radicans* Forst.: *E. B.* t. 2175.

Marshy places, common. —  $\beta$ . Scotland?  $\gamma$ . 3—6. —  $\beta$  is only known, and in our opinion has never been known, except as a garden variety: what is usually taken for it is a small state of  $\alpha$ , common in mountainous situations, and which is the *C. minor* of Miller's Dict.

### 8. TRÓLLIUS Linn. Globe-flower.

*Sepals* 5, or many, coloured. *Pet.* 5 or many, small, linear, flat, with an obscure depression above the contracted base. *Stamens* numerous. *Follicles* many. — Name said to be derived from "*trol* or *trolen*" a *ball* or *globe* in old German, and bearing the same meaning as our English word *Globe-flower*.

1. *T. Europæus* L. (*Mountain G.*); calyx of about 15 concave erect sepals, petals nearly as long as the stamens. *E. B.* t. 28.

Moist mountain-pastures in the north of England and Ireland, Wales and Scotland.  $\gamma$ . 6—8. — *Leaves* in 5 deep segments, which are again cut and serrated. *Flowers* large, handsome.

(*Eránthis hyemális* Salisb., the well-known *Winter-aconite* of our gardens and shrubberies, although naturalized in several places, has no claim to a place in the *British Flora*.)

9. *HELLÉBORUS* Linn. Hellebore.

*Cal.* of 5 persistent sepals. *Pet.* 8—10, small, tubular, and nectariferous. *Stamens* numerous. *Follicles* 3—10, sessile.—Name: *ἔλκω*, to injure, and *βόφα*, food, from its poisonous nature.

1. *H. viridis* L. (*green H.*); stem few-flowered leafy, leaves digitate, calyx spreading. *E. B.* t. 200.

Woods, thickets, and hedges; and about walls and old houses especially in a chalky soil: perhaps wild in Birkdale near Helmsley, Yorkshire, and in the south of England. *¶* 3, 4. — About 1 ft. high. *Leaves* annual, large, on a broad stalk; upper ones sessile; segments linear-lanceolate, serrated at the extremity. *Cal.* large, greenish-yellow. This and the following have been often employed medicinally, instead of the true ancient or Greek *H.* (*H. officinalis* Sibth. and Smith).

2. *H. foetidus* L. (*stinking H.*); stem many-flowered leafy, leaves pedate, calyx converging. *E. B.* t. 613.

Pastures and thickets, especially in chalky counties, in England; wild in Hants; *Dr. Bromfield*. Blantyre, Barncluth and by the Doune (Ayr) on the west; and near Anstruther, on the east of Scotland: but certainly introduced. *¶* 2—4. — A bushy plant, 2 feet high. *Leaves* evergreen, uppermost ones gradually becoming bracteas. *Flowers* globose; *calyx* often tipped with a purple tinge. Fetid and powerfully cathartic.

10. *AQUILÉGIA* Linn. Columbine.

*Cal.* of 5 sepals, deciduous, coloured. *Pet.* 5, regular, terminating below in a horn-shaped spur or nectary. *Stamens* numerous. *Follicles* 5.—Named from *Aquila*, an eagle, whose claws the nectaries resemble.

1. *A. \* vulgaris* L. (*common C.*); spur of the petals incurved, follicles hairy, stem leafy many-flowered, leaves nearly glabrous, styles as long as the stamens. *E. B.* t. 297.

Woods and coppices, in several places, perhaps wild in Hants. *¶* 5—7.—Inner *stamens* frequently imperfect.

11. *DELPHINIUM* Linn. Larkspur.

*Cal.* coloured, deciduous, irregular, upper sepal produced at the base into a spur. *Pet.* 4.; 2 upper ones with appendages included within the spur. *Stamens* numerous. *Follicles* 1—5.—Named from *Delphinus*, or *δελφιν*, a dolphin; on account of the shape of the upper sepal.

1. *D. \* Consolida* L. (*Field L.*); stem erect branched, flowers in lax racemes, petals combined, inner spur of one piece, pedicels shorter than the bracteas, follicle one glabrous. *E. B.* t. 1839.

Sandy or chalky fields; Suffolk, Kent. "About Cambridge, at Ouay, the hills are quite blue with it; it also occurs red, pink, and

white, and yet *Ray* does not mention it;” *Henslow*. Near St. Helier’s, Jersey: *Mr. Bubington*. 4. 6, 7.

12. *ACONITUM* Linn. Wolf’s-Bane.

*Cal.* petaloid, irregular, upper sepal helmet-shaped; 2 upper petals or nectaries on long stalks, and concealed within the helmet-shaped leaflet. *Stamens* numerous. *Follicles* 3—5.—Name derived from *Acone* in Bithynia; or rather from *ακων*, a *dart*, from its having been long ago used to poison such weapons with.

1. *A. \* Napellus* L. (*common W.*, or *Monk’s-hood*); upper sepal arched at the back, spur of the nectary nearly conical bent down, wings of the stamens cuspidate or none, lobes of the leaves cuneate pinnatifid. *E. B. S. t.* 2730.

*Teme*, Herefordshire. *Denbighshire* and *Monmouthshire*. Below *Staverton Bridge*, Devon. 4. 5—7.

13. *ACTÆA* Linn. Bane-berry.

*Cal.* of 4 sepals caducous. *Pet.* 4. *Stamens* numerous. *Ovary* 1. *Berry* 1-celled, indehiscent. *Seeds* numerous.—Named from *ακρη*, the *Elder*; the leaves somewhat resembling those of the *Elder*.

1. *A. spicata* L. (*B.*, or *Herb Christopher*<sup>\*</sup>); raceme simple elongated, petals as long as the stamens, pedicels of the fruit slender. *E. B. t.* 918.

Bushy places, especially in limestone tracts in Yorkshire; near *Halifax*: said to be found near *Ambleside* and *Sandwick*, *Ulleswater*, in *Westmoreland*. 4. 5.—*Stem* 1—2 ft. high. *Leaves* petiolate, 3-ternate; *leaflets* ovate, deeply cut and serrated.

14. *PÆONIA* Linn. *Pæony*.

*Cal.* of 5 sepals. *Pet.* 5—10, concave. *Stamens* numerous, arising from a thick disk. *Follicles* 2—5, with many seeds, and covered with the bi-lamellated stigmas.—Said to be named in honour of the physician *Pæon*, or *Παιων*; but this was one of the names of *Apollo*, and the title of all physicians.

1. *P.\* corallina* Retz (*entire-leaved P.*); herbaceous, follicles downy recurved, leaves biternate glabrous, their segments ovate entire. *E. B. t.* 1513.

On the island called *Steep Holmes*, in the *Severn*. *Blaize Castle*, near *Bristol*. *Mr. Hancock*. 4. 5, 6.

ORD. II. BERBERIDACEÆ Vent.

*Sepals* 3—6, often coloured, in a double row and bracteated. *Petals* of the same or double that number, glandular at the base.

*Stamens* opposite to the petals. *Anthers* 2-celled, opening by recurved valves. *Ovary* 1-celled. *Style* usually short. *Fruit* mostly a *Berry*. *Seeds* inserted at the base of or upon a lateral *placenta*. *Albumen* fleshy. — Shrubs *often spiny*, or herbs, of *temperate climates*. Leaves *ciliated on the serratures*.

1. *BERBERIS*. Stamens 6. Fruit a 2—3-seeded berry.

2. *EPIMEDIUM*. Stamens 4. Fruit a many-seeded pod.

1. *BÉRBERIS* *Linn.* Barberry.

*Cal.* of 6 concave, coloured, inferior, deciduous sepals. *Pct.* 6, each with two glands at the base. *Stamens* 6. *Stigma* pel-

aril. *Albumen* farinaceous. *Embryo* enclosed in a membranous bag. *Cotyledons* foliaceous. — *Aquatic* herbs, with *peltate* or *cordate* leaves and *magnificent* flowers. — The roots of *Nymphæa Lotus* are used as food. One plant of this family, found by Sir R. Schomburgk in the Berbice (*Victoria regia*), has the blossoms 15 inches and the leaves 6 feet in diameter!

1. NYMPHÆA. Petals and stamens inserted upon the base of the ovary.
2. NUPHAR. Petals and stamens inserted upon the receptacle.

### 1. NYMPHÆA Linn. White Water-Lily.

*Cal.* of 4—5 sepals. *Pet.* inserted, as well as the *stamens*, upon a fleshy disk or covering to the ovary (so as apparently to arise from it). *Berry* many-celled, many-seeded. — Name, the *Νύμφα* of the Greeks, so called from its inhabiting the waters, as the *Nymphs* or *Naiads* were wont to do.

1. *N. álba* L. (*great W.*); leaves cordate entire, stigma of 16 ascending rays. *E. B. t.* 160.

Lakes and still waters, frequent. *¶*. 7. — Of this there is occasionally a variety with small flowers.

### 2. NÚPHAR Sm. Yellow Water-Lily.

*Cal.* of 5—6 sepals. *Pet.* inserted, as well as the *stamens*, upon the *receptacle*. *Berry* superior, many-celled, many-seeded. — Name, the *Νουφάρ* of Dioscorides, applied to this plant. The *Arabic* name is *Naúfar*, according to Forskal.

1. *N. lútea* Sm. (*common Y.*); leaves cordate their lobes approximate, *cal.* of 5 sepals, stigma expanded entire with from 10—20 rays. *Nymphæa L.*: *E. B. t.* 159.

Lakes and ditches, frequent. *¶*. 7. — *Flowers* large, smelling somewhat like brandy; which circumstance, in conjunction with its flagon-shaped seed-vessels, has led to the name Brandy-bottle.

2. *N. púmila* De C. (*least Y.*); leaves cordate the lobes approximate, stigma (green) with 8 or 10 teeth and as many (yellow) rays, fruit furrowed upwards. *N. minima. E. B. t.* 2292.

In several of the small Highlands lakes. Mugdock, near Glasgow. Chartners Lough, Northumberland. *¶*. 7, 8. — From the observations made by Dr. Torrey and Gray, it would seem doubtful if this were essentially distinct, not merely from *N. Kalmiana*, but even from *N. lutea*, and some others.

## ORD. IV. PAPAVERACEÆ Juss.

*Calyx* of 2 rarely 3 deciduous sepals. *Corolla* of 4 rarely 5 or 6 *petals*. *Stamens* indefinite. *Ovary* 1-celled. *Stigma* lobed



or rayed. *Fruit* dry, with 2 or more parietal usually projecting placentas, forming complete or incomplete dissepiments, hence 1- or several-celled, many-seeded. *Embryo* in the base of a fleshy *albumen*.—*Herbaceous* plants. Leaves *alternate*.—*Opium* is the product of this tribe, which largely afford a milky, acrid, and narcotic juice; while the seeds of all, except *Argemone Mexicana*, are mild and oleaginous. In all the species the *petals* are crumpled in aestivation except in *Sanguinaria*, where they are 8—10 in number.

\* *Fruit globose, oblong, or clavate. Stigma rayed.*

1. PAPAVER. Placentas lamelliform, projecting to near the axis. Stigma

2. MECONOPSIS. Placentas filiform. Style short but evident.

\*\* *Fruit linear, elongated. Stigma 2—4-lobed.*

3. GLAUCIUM. Placentas 2, spongy, meeting in the axis. Pod 2-valved, opening from the apex. Seeds not crested.

4. RÖEMERIA. Placentas 3—4 (in *Brit. sp.*), scarcely projecting. Pod 3—4-valved, opening from the apex. Seeds not crested.

5. CHELIDONIUM. Placentas 2, filiform. Pod 2-valved, opening from the base. Seeds crested.

\* *Fruit globose, oblong, or clavate. Stigma rayed.*

1. PAPÁVER Linn. Poppy.

*Sepals* 2 rarely 3. *Pet.* 4 rarely 6. *Stigma* sessile, radiated. *Caps.* with the seeds on parietal *placentas* projecting towards the centre of the single cell, and escaping by pores beneath the permanent rayed sessile *stigma*.—Named because it is administered with *pap* (*papa*, in Celtic) to induce sleep.

1. *P. Argemone* L. (*long-prickly-headed P.*); capsule clavate hispid with erect bristles, filaments dilated upwards, stem leafy, leaves bipinnatifid. *E. B.* t. 643.

Corn-fields, not unfrequent. ☉. 5—7. — *Flowers* small. *Petals* narrow, scarlet.

2. *P. hybridum* L. (*round-rough-headed P.*); capsule subglobose hispid with spreading bristles, filaments dilated upwards, stem leafy, leaves bipinnatifid. *E. B.* t. 43.

Sandy and chalky fields in England, rather rare. Norfolk, Durham, Cornwall, Kent, Essex. Ormeshead. Ireland. ☉. 5—7.

3. *P. dubium* L. (*long-smooth-headed P.*); capsule glabrous oblong, crenatures of stigma distinct, filaments subulate, stem airy, bristles of the flower-stalks appressed, leaves once or twice pinnatifid, sessile. *E. B.* t. 644.

Corn-fields, not unfrequent. ☉, 5—7. — *Stems* 1—2 ft. high. *Flowers* large. *Petals* broad, palish scarlet.

4. *P. Rhæas* L. (*common red P.*); capsule glabrous nearly obose, crenatures of the stigmas overlapping each other at the

margin, filaments subulate, stem bristly, leaves once or twice pinnatifid sessile. —  $\alpha$ . bristles of the peduncles spreading. *E. B.* t. 645. —  $\beta$ . bristles of the peduncles appressed.

Corn-fields : rare in the west of Scotland.  $\beta$ . Channel Islands and Isle of Wight. ☉. *Fl.* all summer. — The common form is readily distinguished from *P. dubium* by its short capsule and the spreading hairs of the peduncles : var.  $\beta$ . is conjectured by Dr. Bromfield to be a hybrid.

5. *P. \* somniferum* L. (*white P.*) ; glaucous, capsule globose glabrous, filaments dilated upwards, stem and amplexicaul leaves usually glabrous. *E. B.* t. 2145.

In Norfolk, Cambridgeshire, Isle of Wight, and other places where the plant has been cultivated. ☉. 7. — *Flowers* generally white, with a purple eye, but varying much as to colour. From the unripe capsules *opium* is prepared.

## 2. MECONÓRSIS *Viguer.* Welsh-Poppy.

*Sep.* 2. *Pet.* 4. *Style* evident. *Stigma* of few rays. *Capsule* opening below the style by 4—6 valves. *Placentas* filiform. — Named from *μηκων*, a poppy, and *οψις*, resemblance.

1. *M. Cámbrica* Vig. (*common W.*) ; capsule glabrous, leaves mostly petiolate. *D C.* *Papaver L.* : *E. B.* t. 66.

Rare : rocky and shady places. Foot of Lidford cascade, Devon. Cheddar rocks, Somerset. N. Wales and Westmoreland. Rosstrevor hill, Ireland. Scotland, but naturalized. 4. 6. — *Leaves* on long stalks, pinnate, the pinnæ pinnatifid. *Flowers* large, yellow.

\*\* *Fruit* linear, elongated. *Stigma* 2—4-lobed,

## 3. GLAÚCIUM *Tourn.* Horned-Poppy.

*Sep.* 2. *Pet.* 4. *Stigma* 2-lobed, sessile. *Pod.* linear, the two *placentas* at length connected by a spongy dissepiment, hence 2-celled, 2-valved. *Seeds* dotted without a crest. — Named from the glaucous or sea-green hue of the stems and leaves.

1. *G. líteum* Scop. (*yellow H.*) ; pod minutely tuberculated, cauline leaves amplexicaul sinuate, stem glabrous. *E. B.* t. 8. *Chelidonium Glaucium L.*

Sandy sea-shores, frequent. ☉. 6—10. — *Stem* 1—2 ft. high, very glaucous, much branched. *Leaves* scabrous. *Flowers* very large, handsome, succeeded by pods 6—10 inches long.

2. *G. \* phæniceum* Gært. (*scarlet H.*) ; pod hispid, cauline leaves deeply pinnatifid and cut, stem hairy. *E. B.* t. 1433. *Chelidonium corniculatum L.*

Said to have been found on Portland Island, and in Norfolk. ☉. 6, 7. — *Petals* scarlet, with a black spot at their base.

4. *Rœméria* De Cand. *Rœmeria*.

*Sep.* 2. *Pet.* 4. *Stigma* 2—4-lobed, sessile. *Pod* linear with 2—4 *placentas* not connected by a perfect dissepiment, 1-celled, 2—4-valved, *valves* separating from the apex downwards. *Seeds* dotted, without a crest. — Named after J. J. *Rœmer*, Professor of Botany at Landshut.

1. *R.\*hýbrida* De C. (*erect-podded R.*); pod 3-valved erect hispid near the summit, leaves tripinnatifid the segments linear scabrous. *Chelidonium* L.: *E. B.* t. 201. *Glaucium violaceum* Juss.

Corn-fields, rare. Norfolk and Cambridgeshire. ☉. 5, 6. — *Sepals* hairy. *Petals* violet-blue.

5. *CHELIDÓNIUM* Linn. *Celandine*.

*Sep.* 2. *Pet.* 4. *Stigma* 2-lobed. *Pod* superior, linear, 1-celled, 2-valved, *valves* separating from the base upwards. *Seeds* crested. — Named from *χελιδων*, a swallow; probably from the plant flowering about the time of the arrival of those birds.

1. *C. május* L. (*common C.*); *E. B.* t. 1581.

Waste places, especially near towns and villages. *Pl.* 5—8. — About 2 ft. high, slightly hairy, brittle, full of a yellow fetid juice. *Leaves* pinnate, with about 5 decurrent *leaflets*, which are broadly ovate, lobed, and crenated, sometimes jagged. *Flowers* in long-stalked umbels, yellow, rather small. *Sepals* glabrous. *Pod* long, somewhat turgid.

## ORD. V. FUMARIACEÆ De Cand.

*Sepals* 2, deciduous. *Petals* 4, more or less united, one or two of them gibbous or spurred at the base. *Stamens* 6, in two bundles. *Ovary* 1, with two opposite parietal *placentas*. *Style* filiform. *Stigma* lobed. *Fruit* dry, indehiscent, with one or two seeds; or a *pod* with two valves and many seeds. *Seeds* glossy, with a fleshy *albumen* and *embryo* at the base. — Herbs of temperate climates, with brittle stems and watery juice, slightly bitter and diaphoretic. — *Hypecoüm* has four distinct *stamens*, and a different kind of *corolla*, but is now usually referred here.

1. *FUMARIA*. Fruit roundish, 1-seeded. Seeds not crested.

2. *CORYDALIS*. Fruit elongated, many-seeded. Seeds with a crest.

1. *FUMÁRIA* Linn. *Fumitory*.

*Pet.* 4, one of them gibbous or spurred at the base. *Ovary* 4-ovuled. *Fruit* indehiscent, 1-seeded, the *style* deciduous. *Seeds* without a crest. — Named from *fumus*, smoke, on account, it is said, of the smell.

1. *F. capreolata* L. (*rampant F.*); sepals broadly oval scarcely acute toothed at the base entire above as broad as the tube of the corolla and often half its length, fruit globose obtuse, leaflets flat. *E. B.* t. 943.

Corn-fields, gardens, hedges, and road-sides, frequent. ☉. 5—9. —<sup>a</sup>A very variable plant, best distinguished by its large *petals* and *calycine leaves*. Stems generally climbing, sometimes only diffuse. Leaves bipinnate; leaflets usually very broad, rarely cuneate oblong, but never linear or grooved. In the south of Europe the fructiferous *pedicels* are usually remarkably recurved, in Germany and the south of England they are only arched backwards, and in Wales and Scotland often straight and patent. The fruit is often in some soils more or less tuberculated, but usually quite even. Lower *petal* linear or gradually dilated from the middle to the point, not merely dilated near the point as in the next species. Specimens from Tintagel in Cornwall, and Tenby in Wales, have been supposed by Mr. W. Mitten in the *Lond. J. Bot.* vii. p. 556, and Mr. Babington in the *Bot. Gazette*, i. p. 61, to be *F. agraria*. We have seen the former: it may be the plant of Koch, but not of Parlatore (which has the sepals oblong acuminate, and narrower than the corolla), nor perhaps of Lagasca: we can in no respect distinguish it from *F. capreolata*; perhaps even Parlatore's may be a variety.

2. *F. officinalis* L. (*common F.*); sepals ovato-lanceolate acute sharply toothed, fruit globose very abrupt or obcordate. —*a.* erect, very glaucous, leaflets narrow usually grooved. *F. officinalis*, *E. B.* t. 589. —*β.* diffuse or climbing, green, leaflets flat broad.

*a.* In dry fields and road-sides, common. —*β.* also frequent in highly cultivated fields and gardens. ☉. *Fl.* through the summer.

3. *F. parviflora* Lam. (*least-flowered F.*); sepals very minute, fruit globose slightly pointed or blunt, leaflets linear channelled. —*a.* flowers rose-coloured, leaves of a lively or yellowish green. *E. B.* t. 590. *F. Vaillantii* Bab. in *E. B. S.* t. 2877. —*β.* flowers white tipped with dark purple, leaves glaucous. *F. parvif. DC.*

*a.* Fields; rare. Woldham, near Rochester, and near Epsom. In newly turned-up ground for building, at Hill-side, north of the Calton Hill, Edinburgh. —*β.* Brookham, Surrey. Mr. Waddel's grounds at Hermitage, near Leith. ☉. 6—9. — The more common of these two *vars.* is that with white fls. The purple or rose-coloured *var.* comes very near the true *F. Vaillantii*, which has the leaflets broader and flat, and the fruit more obtuse, but may be a mere variety.

4. *F. micrantha* Lag. (*small-flowered F.*); sepals peltate orbicular somewhat cordate at the base, inciso-dentate at the margin concave at the back, about twice shorter than the corolla and one and a half or twice broader, fruit globose subapiculate, segments of the leaves narrow linear grooved. *Hook. Ic. Pl.* t. 363. *E. B. S.* t. 2876.

About Edinb., and in several other localities in the east of Scotland; Dover and Guildford in England. ☉. 6—9.

## 2. CORÝDALIS *De Cand.* *Corydalis*.

*Pet.* 4, one of them gibbous or spurred at the base. *Ovary* many-ovuled. *Pod.* 2-valved, compressed, many-seeded. Seeds with a crest. — Named from *κορυδαλις*, the Greek name for the *Fumitory*, with which the present genus was, till lately, united.

1. *C.\* sólida* Hook. (*solid-rooted C.*); stem simple erect with a scale beneath the lower leaf, leaves 3—4 biternate their leaflets cuneate or oblong and as well as the bracteas cut, root tuberous solid, style persistent. *E. B.* t. 1471.

Groves and thickets: at Kendal (an old garden). Wickham, Hampshire (perhaps wild); and near Birmingham. *fl.* 4, 5. — *Flowers* large, purplish; *leaves* glaucous; *seeds* with a crest, in germination showing only one ovate *cotyledon*.

2. *C.\* lútea* Lindl. (*yellow C.*); stem angular erect, leaves bipinnate, leaflets broadly cuneate cut or trifid, bracteas minute, style deciduous, pods nearly cylindrical shorter than the pedicels, root fibrous. *Fumaria*: *E. B.* t. 588.

On old walls in many places, but only where it had escaped from cultivation. *fl.* 5—8. — *Flowers* yellow; *seeds* with a concave crest, in germination with two lanceolate *cotyledons*.

3. *C. claviculáta* DC. (*white climbing C.*); stem much branched climbing, leaves pinnate, pinnæ stalked ternate or pedate, leaflets elliptical entire, petioles ending in tendrils, pedicels very short scarcely so long as the minute bracteas, root fibrous, style persistent. *Fumaria L.*: *E. B.* t. 103.

Bushy and shady places, in gravelly or stony soil. In Scotland, most abundant on walls and roofs of houses, especially in the Highlands. *fl.* 6, 7. — *Stems* long, very slender. Whole plant extremely delicate. *Flowers* small, pale yellow almost white; *seeds* with a concave crest, in germination with two oblong lanceolate *cotyledons*.

## . ORD. VI. CRUCIFERÆ *Juss.*

*Calyx* of 4 sepals. *Petals* 4. *Stamens* usually 6 and tetradynamous; 2 solitary, alternate with the petals; 4 opposite to them in 2 pairs: rarely only 4 and equal. *Ovary* and *Style* 1; *hypogynous glands* at the base of the solitary stamens. *Pericarp* usually a *pouch* or *pod*, 2-rarely 1-celled, 2-valved the valves opposite the shorter stamens; sometimes valveless. *Seeds* on marginal placentas (between the longer stamens) without *albumen*. *Radicle* curved. *Cotyledons* plane, parallel to the dissepiment and with their edges applied to the radicle (*accumbent*

o=)<sup>1</sup>; or plane, with their back turned to the radicle (*incumbent* o||); or folded and embracing the radicle (*conduplicate* o>>) — *Herbs. Leaves* alternate. *Flowers* generally in corymbs which at length become racemes. — A most important *Natural Order*, many of the plants which it contains being cultivated as esculents; the *Cabbage*, *Turnep*, *Mustard*, and *Cresses* of various kinds, *Horse-radish*, &c. They contain an essential oil which renders them stimulating, while their seeds yield a fine and mild oleaginous fluid, as *Mustard*, and they are antiscorbutic. The mustard-seed is used for emapisms. Most kinds contain sulphur and nitrogen, and give out in decaying a smell resembling that of animal matter.

I. SILICULOSÆ. Fruit short, scarcely more than a half longer than broad.

A. *Fruit without valves; or 1-celled, 1-seeded.*

17. CAKILE. Fruit of 2 joints placed end to end, upper angular deciduous 1-seeded, lower sometimes sterile. Cot. o=.
32. CRAMBE. Fruit of 2 joints placed end to end, upper globose deciduous 1-seeded, lower stalk-like. Cot. o>>.
26. SENEHIERA. Fruit with 2 cells placed side by side, each 1-seeded. Cot. o||.
27. ISATIS. Fruit 1-celled, 1-seeded, with keeled valves. Cot. o||.

B. *Pouch with a dissepiment and 2 valves.*

\* *Style flat, winged. Dissepiment of pouch oval.*

31. VELLA. Style twice as long as the turgid pouch. Cot. o>>.

\*\* *Style nearly terete.*

† *Pouch laterally compressed; dissepiment narrow, oblong, or linear: valves keeled or winged.*

23. CAPSELLA. Pouch obcordato-cuneate; valves keeled wingless; cells many-seeded. Cot. o||.
13. THLASPI. Pouch emarginate; valves winged; cells 2—8-seeded. Filaments simple. Cot. o=.
14. HUTCHINSIA. Pouch entire; cells 2-seeded. Filaments simple. Cot. o=.
15. TEESDALIA. Pouch emarginate; cells 2-seeded, Filaments with a scale. Cot. o=.
16. IBERIS. Cells of pouch 1-seeded. Petals unequal. Cot. o=.
25. LEPIDIUM. Cells of pouch 1-seeded. Petals equal. Cot. o||, or sometimes o=.

†† *Pouch dorsally compressed or globose; dissepiment oval, in the broadest diameter.*

10. COCHLEARIA. Pouch turgid; valves 1-nerved. Style permanent. Seeds many in each cell. Cot. o=.

<sup>1</sup> The radicle points to or is next the placenta, and, unless accidentally twisted, must be parallel to the dissepiment. When therefore the cotyledons are flat, with their edges turned to the placenta, they are *truly accumbent*, although *apparently incumbent*. But when they are linear or the seed is nearly terete, their position and that of the seed itself may be altered by a twist of the seed-stalk, in which case it is preferable to be guided solely by the apparent relative position of the radicle and cotyledons in the detached seed.

9. ARMORACIA. Pouch turgid; valves nerveless. Style permanent. Seeds many in each cell. Cot. o=. Petals white or yellow.
24. SUBULARIA. Pouch turgid. Style deciduous. Seeds many in each cell. Cot. o||. Petals white.
12. DRABA. Pouch compressed or valves slightly convex. Seeds many in each cell. Cot. o=.
22. CAMELINA. Pouch inflated; valves 1-nerved. Style permanent. Seeds many in each cell. Cot. o||. Petals yellow.
11. KONIGA. Pouch compressed; cells 1-ovuled, 1-seeded. Filaments simple. Hypogynous glands 8. Cot. o=. Petals white.
- 11<sup>a</sup>. ALYSSUM. Pouch compressed; cells 2-ovuled, usually 2-seeded; valves convex in the middle, flat at the edges. Seeds not margined. Filaments (the two shorter ones or all) with a tooth, rarely simple. Hypogynous glands (or subulate processes, when all the filaments are simple), 4. Petals emarginate (yellow). Cot. o=.
- 11<sup>b</sup>. BERTERIA. Pouch compressed; cells about 6-seeded. Two shorter filaments with a tooth. Hypogynous glands 4. Petals (white) tripartite. Col. o=.

II. SILIQUOSÆ. Fruit usually much longer than broad, rarely only twice as long.

C. Pods 2-valved, with a dissepiment.

\* Style sometimes very short, sometimes elongated, but not forming a stout conical beak. Cot. o= or o||.

† Calyx equal at the base, or very slightly gibbous.

6. DENTARIA. Pods flat, linear; valves nerveless, usually separating elastically. Style filiform. Seed-stalks broad. Cot. o=.
7. CARDAMINE. Pods flat, linear; valves nerveless, usually separating elastically. Style short or none. Seed-stalks slender. Cot. o=.
5. ARABIS. Pods compressed, long, linear; valves 1-nerved, or with several longitudinal coarse veins. Seeds in one row. Cot. o=.
4. TURRITIS. Pods compressed, long, linear; valves 1-nerved. Seeds in two rows. Cot. o=.
12. DRABA. Pods compressed, oblong; valves 1-nerved. Seeds in 2 rows. Cot. o=.
8. BARBAREA. Pods linear, 4-angled; valves 1-nerved. Seeds in a single row. Cot. o=.
8. NASTURTIUM. Pods oblong or linear, terete; valves very convex, reticulately veined, nerveless. Seeds irregularly in 2 rows. Cot. o=.
19. SISYMBRIUM. Pods linear, terete, or slightly angled; valves 8- (or rarely 1-) nerved. Seeds not striated; stalks slender, Calyx slightly spreading. Cot. o||.
20. ALLIARIA. Pods long, linear, terete; valves slightly 8-nerved. Seeds striated; stalks broad. Cot. o||.
21. ERYSIMUM. Pods linear, 4-angled; valves 1-nerved. Seed-stalks slender. Calyx erect. Cot. o||.

†† Calyx conspicuously bisaccate at the base. Valves of pod nerved.

21. ERYSIMUM. Stigma nearly simple. Pod 4-angled. Cot. o||.
2. CHEIRANTHUS. Stigma on a style, lobes patent (or capitate). Cot. o=.
1. MATTHIOLA. Stigma sessile, lobes connivent, either thickened or horned at the back. Cot. o=.

18. HESPERIS. Stigma nearly sessile; lobes elliptical, obtuse, connivent. Cot. o||.
- 18<sup>a</sup>. MALCOLMIA. Stigma conical acute. Pod cylindrical. Cot. o||.
- \*\* *Style forming a stout conical, often seed-bearing beak.* Cot. o>>.
28. BRASSICA. Calyx erect. Pod terete or angled. Seeds in a single row, globose.
29. SINAPIS. Calyx spreading. Pod terete or angled. Seeds in a single row.
30. DIPLOTAXIS. Calyx spreading. Pod compressed. Seeds in two rows.

D. *Fruit without valves or a dissepiment.*

33. RAPHANUS. Fruit divided transversely into several 1-seeded joints. Calyx erect. Cot. o>>.

SUB-ORD. I. PLEURORHIZÆ. *Cotyledons accumbent.* (o=)

Tribe I. ARABIDÆÆ. *Pod elongated; valves flat, concave, or slightly keeled: dissepiment narrow, in the broadest diameter.*<sup>1</sup>  
Cot. o=(Gen. 1—8.)

I. MATTHÍOLA Br. Stock.

*Pod* (rounded or compressed) crowned with the connivent 2-lobed *stigma*, the lobes either thickened at the back<sup>2</sup> or with a horn at the base. *Cal.* erect, 2 opposite sepals saccate at the base. Longer *filaments* dilated.—Named in honour of an Italian physician, *P. A. Matthiolum*.

1. *M. incána* Br. (*hoary shrubby S.*); stem shrubby upright branched, leaves lanceolate entire hoary, pods cylindrical without glands. *Cheiranthus L.*; *E. B. t.* 1935.

Cliffs to the eastward of Hastings; but not wild. Ventnor, Isle of Wight. *h.* 4—6. — The origin of the Stock Gilly-flower of our gardens, where it is generally treated as an annual or biennial.

2. *M. sinuáta* Br. (*great sea-S.*); stem herbaceous spreading, leaves downy lower ones sinuated, pods compressed muricated. *Cheiranthus L.*; *E. B. t.* 462.

Sandy shores of Wales, Cornwall, Jersey, and Guernsey. *♂.* 5—8. — *Flowers* purple, large, fragrant at night. Our two British species have no point or horn at the base of the stigma.

2. CHEIRÁNTHUS Linn. Wall-flower.

*Pod* compressed or 2-edged. *Cal.* erect, 2 opposite sepals saccate at the base. *Stigma* placed on a *style*, 2-lobed, the lobes

<sup>1</sup> Some species of *Draba* almost agree with this character.

<sup>2</sup> It often happens, when this is the case, that the radicle is slightly twisted so as to be applied to the back of the cotyledons; but, as they are parallel to the dissepiment, they are really accumbent.



patent or capitate. *Hypogynous glands* none between the longer stamens. — Named perhaps from the Arabic *Kheyry*, not however originally applied to this genus; or rather from *χειρ*, the *hand*, and *αῖθος*, a *flower*, because from its fragrance one delights to carry it in the hand.

1. *C. Chetvi* L. (*common W.*); leaves lanceolate acute entire with bipartite appressed hairs, pods linear, lobes of the stigma patent, stem shrubby at the base. *C. fruticosus* L.: *E.B.* t. 1934.

Old walls. *h.* 5, 6. — A *variety*, with larger, more highly coloured and more flaccid *petals*, is commonly cultivated in gardens.

### 3. *BARBARÆA* Br. Winter-*cross*.

*Pod* 4-angled and somewhat 2-edged; *valves* with a middle

1. *T. glabra* L. (*long-podded T.*); radical leaves toothed hairy, cauline ones amplexicaul entire glabrous. *E. B.* t. 777.

Banks and road-sides in many parts of England, but not general; apparently most frequent in Norfolk and Suffolk. Bowling Bay, Patrick, and Redgorton (Perthshire), in Scotland. ☉. 5—7. — *Stem* 1—2½ feet high. *Leaves* oblong-lanceolate, glaucous, *radical* ones toothed or sinuate at the base, *cauline* ones sagittate. *Flowers* yellowish-white. *Pods* long, erect. In this genus there are no glands between the larger stamens.

### 5. *A'RABIS* Linn. Rock-cress.

*Pod* linear, compressed, crowned with the nearly sessile stigma; *valves* nerved or coarsely veiny. *Seeds* in one row. *Calyx* erect.—Name from *apakis*, applied by Dioscorides to *Lepidium Draba*.

1. *A. stricta* Huds. (*Bristol R.*); leaves toothed obtuse hispid, radical ones sinuate toothed, cauline leaves sessile, stems hairy at the base, petals cuneate-linear erect, pods erect, their valves 1-nerved. *E. B.* t. 614.

Rare; St. Vincent's rocks, near Bristol, among limestone. ♀. —5.—Habit of *Sisymbrium Thalianum*, but perennial; *root-leaves* strongly ciliated, with frequently forked or trifid setæ, and rather than hairy; *flowers* twice the size; *stem-leaves* few, small.

*petraea* DC. (*alpine R.*); radical leaves lyrato-pinnatifid cauline ones nearly undivided, petals obovate clawed spreading twice as long as the pedicels, their 1-nerved. *A. hispida* L. *Cardamine hastulata*. *E. B.* t. 614.

Alpine rocks in North Wales. Frequent on the high mountains of the west and north of Scotland, particularly the Cairngorm range. Hebrides, especially Skye. ♀. 6—8. — *Plant* 3—6 inches high, slender, glabrous or hairy. *Flowers* with a purple tinge.

3. *A. ciliata* Br. (*fringed R.*); leaves somewhat toothed oval labrous ciliated, radical ones nearly sessile obtuse, those of the simple stem semi-amplexicaul or rounded at the base, pods early erect, their valves 1-nerved. *Turritis alpina* L.: *E. B.* t. 1746.

By the sea-side at Rinvile, Cunnamara, Ireland. ♂. 7, 8.—*Stem*. 4—6 inches high. *Root-leaves* several, oval, or obovate-oblong, obtuse; *cauline* ones small.

4. *A. hirsuta* Br. (*hairy R.*); leaves all hispid dentate, cauline ones semi-amplexicaul, pods erect-straight, their valves 1-nerved. *Turritis* L.: *E. B.* t. 587.

Walls, rocks, and banks: frequent in many parts of England and Scotland. ♂. 6—8. — One foot or more high, erect, stiff. *Stem*

rough with spreading hairs, bearing many leaves. *Petals* small, white, erect.

5. *A. Turríta* L. (*Tower Wall-cress*); leaves amplexicaul, pods recurved flat and linear with the margins thickened and valves coarsely veined longitudinally not nerved, bractæas foliaceous. *E. B.* t. 178.

Walls of Trinity and St. John's Colleges, Cambridge; and Magdalen College, Oxford. ♂. 5.

#### 6. *DENTÁRIA* Linn. Coral-root.

*Pod* narrow-lanceolate, tapering; the *valves* flat, generally separating elastically, nerveless. *Seed-stalks* broad. — Name: *dens*, a tooth, from the tooth-like scales of the root.

1. *D. bulbifera* L. (*bulbiferous C.*); stem quite simple, lower leaves pinnated, upper ones simple with axillary bulbs. *E. B.* t. 309.

Woods and shady places, rare. Sussex; Middlesex. Near Dupplin and banks of the Esk, but scarcely wild. *℥.* 4, 5. — *Root* creeping, bearing thick fleshy scales or tooth-like processes. *Stem* 1—1½ foot high. *Leaflets* lanceolate as are the upper leaves, serrated, somewhat fleshy; *leaves* often having a small bulb in their axils. *Flowers* rather large, purple.

#### 7. *CARDAMÍNE* Linn. Bitter-cress.

*Pod* linear, the *valves* flat, generally separating elastically, nerveless. *Seed-stalks* slender. — Name: *καρδία*, the heart, and *δαμαω*, to fortify; from its supposed strengthening qualities.

1. *C. amára* L. (*large-flowered B.*); leaves pinnated, radical leaflets roundish, cauline ones dentato-angled, style oblique, stigma rather acute, stem rooting at the base, petals obovate. *E. B.* t. 1000.

Wet meadows, near rivulets; not unfrequent. *℥.* 4—6. — One foot high. Well distinguished from the following by the broad angulato-dentate *leaflets* of its upper *leaves*, and the large white flowers, which have purple *anthers*.

2. *C. praténsis* L. (*common B.*); leaves pinnate, radical leaflets roundish dentate, cauline ones lanceolate nearly entire, style straight, stigma capitate, petals obovate. *E. B.* t. 776.

Moist meadows, abundant. *℥.* 4—6. — *Stem* 1—2 feet high. *Flowers* large, blush-coloured, sometimes found double, when the leaflets occasionally produce new plants, on coming in contact with the ground, while still attached to the parent plant.

3. *C. impatiens* L. (*narrow-leaved B.*); leaves pinnate, leaflets lanceolate somewhat cut or entire, petioles of the stem-leaves

with fringed auricles at their base, petals linear or none. *E. B.* t. 80.

Moist rocks, rare; Derbyshire, Westmoreland, and Cumberland. By the Wye above Tintern. Godalming, Surrey. Near the falls of the Clyde and banks of the Doune, Scotland. ☉. 5—8. — *Stem* 1—1½ foot high. Well distinguished by the stipule-like auricles at the base of each petiole. *Flowers* minute, white.

4. *C. hirsuta* L. (*hairy B.*); leaves all pinnate without auricles, radical leaflets roundish angled or toothed petiolate, stem-leaflets narrower nearly sessile, petals oblong, stigma blunt, pods erect. — *α.* smaller, pedicels erect, stamens often 4, style very short. *E. B.* t. 492. — *β.* larger, pedicels patent, stamens usually 6, style as long as the breadth of the pod. *C. flexuosa* With. *C. sylvatica* Link.

Moist shady places, abundant. ☉. 3—8. — Varying much in size and luxuriance, according to soil and situation, from 4 inches to a foot or more in height. *Stamens* 6 in both varieties, or 4 in depauperated specimens.

(*C. bellidifolia* L., *E. B.* t. 2355, with simple entire leaves, is unknown, at least in the present day, as a native either of Scotland or Ireland.)

#### 8. *NASTURTIIUM* Br. Water-Cress. Yellow-Cress.

*Pod* nearly cylindrical (sometimes short); *valves* concave, neither nerved nor keeled. *Seeds* in a double row. *Calyx* patent. — Named from *Nasus tortus*, a *convulsed nose*, an effect supposed to be produced by the acrid and pungent quality of this plant.

1. *N. officinále* Br. (*common W.*); leaves pinnate, leaflets ovate subcordate sinuato-dentate, petals (white) twice as long as the calyx, pods linear. *Sisymbrium Nasturtium* L.: *E. B.* t. 855.

Brooks and rivulets, frequent. ♀. 5—10. — A well-known aquatic plant, and an excellent and wholesome salad. *Lower leaves* large, of 5—7 distant *leaflets*, the terminal one the largest and roundest; *cauline leaflets* subovate, sometimes oblong, all rather succulent, glabrous; more or less waved or toothed. *Pods* about an inch long, about as long as the pedicels, curved upwards. *Hypogynous glands* 4.

2. *N. sylvéstre* Br. (*creeping Y.*); leaves pinnate, leaflets lanceolate cut, those of the uppermost leaves nearly entire, root creeping, petals yellow twice as long as the calyx, pods narrow oblong or linear. *Sisymbrium* L.: *E. B.* t. 2324.

Water-sides and waste places, but not common; very rare in Scotland. ♀. 6—8. — *Roots* much creeping. *Stem* 1 foot high, angular, branched. *Rhachis* often slender and zigzag. *Pedicels* patent; *Pods* also patent or curved a little upwards, varying from 3 to 9 lines long (*De C.*), usually about the length of the pedicels, but often longer, sometimes shorter. *Hypogynous glands* 6. *N. anceps*

of Bab. Man., and perhaps also of Reichenbach (Ic. Flor. Germ. n. 4364.), appears to be merely a form with shorter pods than usual; at least we have seen no British specimens so distinctly marked as to entitle them to rank even as a permanent variety: the true *N. anceps* DC. (figured in Flor. Dan. t. 984.) is *Armoracia amphibia*; the plant of some German writers is *N. sylvestre*, and of others *N. terrestre*, while that we have from Caucasus, and of some Russian botanists, is *N. Pyrenaicum* Br.<sup>1</sup>

3. *N. terrestre* Br. (*Marsh Y.*); leaves lyrato-pinnatifid unequally toothed, root simply fibrous, petals (yellow) not longer than the calyx, pods oblong turgid and the septum 2—4 times longer than broad. *N. palustre* DC. *Sisymbrium terrestre* E. B. t. 1747.

Watery places. ☉. 6—10. — One foot high, branched. Pods about as long as the spreading pedicels, ascending. Distinguished chiefly from the last by its fibrous root, pinnatifid not pinnate leaves, minute petals, and more turgid pods.

Tribe II. ALYSSINÆ. *Pouch with the dissepiment in the broadest diameter: valves flat or concave. Cot. 0=.* (Gen. 9—12.)

#### 9. ARMORACIA Rupp. Horse-Radish. Water-Radish.

*Pouch* elliptical or globose, many-seeded: the valves turgid, not nerved. *Filaments* simple. *Hypogynous glands* 6. *Seeds* not margined. *Calyx* patent. — So named by the Romans from *Armorica*, or Britany, where it was supposed to grow abundantly.

1. *A. amphibia* Koch (*great W.*); leaves oblong pinnatifid or serrated, root fibrous, petals (yellow) twice as long as the calyx, pouch 2—3 times shorter than the pedicel, stigma capitate. *Nasturtium* Br. *Sisymbrium* L.: E. B. t. 1840.

Watery places; not uncommon in England. 2. 6—9. — *Stems* 2—3 feet high. If any leaves grow under water, they are deeply pinnatifid, otherwise only deeply serrated. *Pedicels* usually deflexed. *Style* as long as the oblong *germen*. *A. natans* (*Nasturtium* DC.) is closely allied; so also is *A. Americana* (*Nasturtium natans* Torr. and Gr.), but it has the white petals and peltate stigma of the next.

2. *A. rusticana* Baumg. (*common H.*); radical leaves oblong on long foot-stalks crenate, cauline ones elongato-lanceolate serrate or entire, root long cylindrical, petals (white) twice as long as the calyx, pouch 2—3 times shorter than the pedicel, stigma peltate. *Cochlearia Armoracia* L.: E. B. t. 2323.

Said to be wild in some parts of the north of England, and in Scotland, but too often the outcast of gardens. 2. 5. — *Roots*

<sup>1</sup> The fruit of this species is different from *Nasturtium*, being an ovate pouch, the valves with a central vein or slender nerve, sometimes only conspicuous at the base; so that it is difficult to point out how it differs from *Armoracia*, except perhaps by the seeds.

long, running deep into the ground, well known at our tables, and esteemed for their pungent flavour. *Leaves* much veined. *Fruit* seldom perfect.

#### 10. COCHLEÁRIA Linn. Scurvy-Grass.

*Pouch* oval or globose, many-seeded; the *valves* turgid, with a prominent nerve in the middle. *Filaments* simple. *Hypogynous glands* 4. *Seeds* not margined, tuberculate. *Calyx* patent. — Name: *cochlear*, a *spoon*, from the shape of the leaves. ●

1. *C. officinális* L. (*common S.*); pouch globose ovate or elliptical, radical leaves cordate at the base, usually reniform entire or sinuated, sometimes hastate. —  $\alpha$ . larger, cauline leaves nearly all sessile, usually oblong or oval sinuated. *E. B.* t. 551. —  $\beta$ . smaller, lower stem-leaves usually deltoid and stalked. *C. Groenlandica* L.: *E. B.* t. 2403. —  $\gamma$ . radical leaves sometimes and cauline ones nearly all hastate stalked. *C. Danica* L.: *E. B.* t. 696.

$\alpha$  and  $\gamma$  on the sea-coast, in a stony or muddy soil, frequent;  $\beta$  on the Highland mountains. ☉ or ♄. 5—8. — The common variety exhibits, on the shores of the Frith of Clyde, all the variations noticed in the shape of the pouch, which is, moreover, often as large and veiny as in the figure of *C. Anglica*, in *E. B.* t. 552. The true radical leaves of our *var. γ* are perhaps always reniform; but having decayed, or been broken off, the lower cauline ones are mistaken for them.

2. *C. Anglica* L. (*English S.*); pouch elliptical (large) veiny, radical leaves petiolate ovate or oblong entire mostly acute or tapering at the base sometimes subcordate, cauline leaves mostly sessile oblong sinuated or with a few coarse teeth. *E. B.* t. 552.

Margins of large rivers, at a distance from the open sea, perhaps not uncommon. Thames between London and Woolwich; Avon above Bristol; Mersey near Warrington. Cree near Newton Stewart, Scotland. ☉. 5—7. — *Pouch* generally larger than in the last, but certainly not more elliptical or veiny than what we refer to that species; *leaves* narrower and often more entire; *flowers* larger. The *radical leaves* are sometimes cordato-ovate, but usually oblong, never, so far as we have observed, broadly reniform or angled; but perhaps this and many other supposed species are only forms of the variable *C. officinális*.

#### 11. KÓNIGA Br. Koniga.

*Pouch* subovate; *valves* nearly plane; *cells* 1-ovuled and 1-seeded; seed-stalks with their base adnate to the dissepiment. *Calyx* patent. *Petals* entire (white). *Hypogynous glands* 8! *Filaments* simple. — Name: revived by Mr. Brown, from the

*König* of Adanson, and altered by him to *Königa* in order to commemorate the important services rendered to Botany by Mr. *König* of the British Museum.

1. *K. \* maritima* Br. (*Sea-side K.*, or *sweet-Alyssum*). *Alyssum* Willd.; *E. B.* t. 1729. *Clypeola* L.

Near the sea, but only where escaped or ejected from gardens. Budleigh Salterton, Devon; on the garden-wall at Newlyn, Mount's Bay, Cornwall; near Aberdeen. *Æ.* 8, 9. — *Stem* somewhat woody at the base. *Leaves* linear-lanceolate, hoary with bipartite appressed hairs. *Flowers* white and fragrant, honey-scented. The plant is much cultivated. — Mr. Brown admits another species with several alternate ovules in each cell; and some foreign authors have still more extended the genus. In several genera, as *Arabis*, the number of hypogynous glands varies from 4 to 8.

(*Alyssum calycinum* Willd. has been enumerated as a British species; but it is unquestionably a plant recently introduced, either with seed-corn or ballast, though now established in several parts of England and Scotland. It has simple filaments, and long subulate processes instead of hypogynous glands, by which, and its persistent calyx, it is known from the rest of the genus. *Berteroa incana* DC. said to have been found near Lewes and Weymouth, has also no claims to be considered indigenous.)

## 12. DRABA Linn. Whitlow-grass.

*Pouch* or *pod* entire, oval or oblong; *valves* plane or slightly convex, 1-nerved at the base, nerved or veiny upwards; *cells* many-seeded. *Seeds* not margined. *Filaments* simple. — Named from *δραβη*, *acrid*, as are the leaves of many of this tribe.

\* *Petals* deeply cloven, white. *Erophila* DC.

1. *D. verna* L. (*common W.*); *scapes* naked, *leaves* lanceolate somewhat toothed hairy. *E. B.* t. 586. *Erophila vulgaris* DC. — *β.* pouch swollen.

Frequent on walls, rocks, and dry banks. — *β.* abundant on shelving rocks on Ben Lawers, above the lake. ☉. 3—6. — The var. *β* is a very singular one, found by ourselves and others, for many years, in the above locality, and never seen to vary: the *pouch* is as much inflated as that of *Subularia*.

\*\* *Petals* slightly emarginate, yellow. *Style* elongated. *Aizöpsis* DC.

2. *D. aizöides* L. (*yellow alpine W.*); *scapes* leafless glabrous, *petals* twice the length of the calyx, *leaves* lanceolate rigid glossy keeled and ciliated. *E. B.* t. 1271.

Walls and rocks near Swansea, S. Wales. *Æ.* 3, 4. — Remarkable for its bright yellow flowers and glossy leaves margined with hairs. The cultivated plant of this name is a variety with the *stamens* constantly scarcely longer than the *calyx*, and is *D. brachystemon* DC. :

the Welsh plant has the stamens of the length of the petals, as in wild Continental specimens, and the pouch glabrous.

\*\*\* *Petals slightly emarginate or entire, white. Style very short.*

3. *D. rupēstris* Br. (*Rock W.*); scape leafless or with rarely one leaf, pouch or pod oblong-oval, leaves plane lanceolate hairy. *D. hirta* *E. B.* t. 1338 (not *Linn.*).

Mountain summits; rare. Ben Lawers, Cairngorm, and Ben Hope; Scotland. 4. 7. — The slender perennial root penetrates deep among mosses and the crevices of rocks, bearing above many short branches, each crowned with a tuft of lanceolate, soft, plane, entire, or rarely obscurely toothed, hairy leaves; their margins ciliated; the hairs mostly simple, sometimes branched, on the surface not unfrequently stellated. Scapes several from the same root, 1—1½ inch high, slender, simple, stellato-pubescent. Pedicels short, pubescent. Cal. mostly downy. Pouch oval-oblong, pubescent. In cultivation the leaves become more glabrous, the hairs on the margin longer and more rigid, and the scape 3—3½ inches high.

4. *D. incāna* L. (*twisted-podded W.*); cauline leaves several lanceolate toothed hoary with starry pubescence, pod oblong-lanceolate somewhat twisted. *E. B.* t. 388.

Mountain rocks, in much less elevated situations and far more frequent than the last; in Wales, the N. of England, and Scotland. 3. 6, 7. — Stem 4—6 inches to a foot or more high, sometimes throwing out lateral branches. Lower leaves frequently entire, upper ones deeply toothed, almost cut, acute. Pods erect, mostly glabrous.

5. *D. murālis* L. (*Speedwell-leaved W.*); stem branched, leaves ovate obtuse amplexicaul toothed, pouch patent glabrous. *E. B.* t. 912.

Limestone mountainous countries, on rocks and walls. Craven, Yorkshire; Warden hills, Bedfordshire; Emborough, Somersetshire. About Forfar, Edinb., and Chelsea, where it has escaped from gardens. Blarney Castle, Ireland. ☉. 4. 5. — Six inches to one foot high. Leaves scabrous. Pouch elliptical, shorter than the pedicel.

Tribe III. THLASPIDÆ. *Pouch compressed, with the dissepiment very narrow in the narrowest diameter, valves keeled or winged. Cot. 0=.* (Gen. 13—16.)

### 13. THLĀSPI *Linn.* Penny-cress.

*Pouch* laterally compressed, emarginate; *valves* winged at the back; *cells* 2—8-seeded.—Named from *πλαω*, to *flatten*; on account probably of its compressed *seed-vessels*.

1. *T. arvēse* L. (*Field P.* or *Mithridate Mustard*); pouch orbicular entirely surrounded with a broad longitudinal wing, wing with a marginal nerve, cells about 6-seeded, seeds concen-



trically striated, leaves arrow-shaped toothed glabrous. *E. B. t.* 1659.

Fields and by road-sides, in various places; but not common. ☉. 5—7. — One foot high, branched above. *Flowers* extremely small, white. *Pouch* very large, with unusually broad wings.

2. *T. perfoliatum* L. (*perfoliate* P.); pouch obcordate entirely surrounded with a wing, wing with a marginal nerve, cells 4—6-seeded, seeds smooth, style included within the notch, cauline leaves cordate somewhat toothed glabrous. *E. B. t.* 2394.

Limestone pastures; rare. Burford, Oxfordshire; Bourton, Upper Slaughter, and Naunton-Seven-Springs, near Stow-on-the-Wold, Gloucestershire. Stone walls about Kineton, Warwickshire. ☉. 4, 5.

3. *T. alpestre* L. (*alpine* P.); pouch obovate retuse entirely surrounded by a wing, nerve of the wing obsolete, cells 2—4-seeded, style exserted, stamens as long as the petals, cauline leaves cordato-sagittate, stem simple. *E. B. t.* 81.

Limestone pastures in Derbyshire, Yorkshire, and Caernarvonshire. Glen Isla, Clova. ♀. 6—8.

#### 14. HUTCHINSIA Br. (not of Agardh.) *Hutchinsia*.

*Pouch* elliptical, entire; the *valves* keeled, without wings; cells 2-seeded. *Filaments* simple. — Named in honour of the late Miss *Hutchins*, of Bantry, Ireland, who explored most successfully the Botany of her native country, and added many new species to its Cryptogamia.

1. *H. petræa* Br. (*Rock H.*); leaves pinnate entire, petals scarcely longer than the calyx, pouch obtuse at both extremities, stigma sessile. *Lepidium E. B. t.* 111.

Limestone rocks; west of England, and Wales, and Yorkshire. Wall of Eltham churchyard, Kent, probably introduced. ☉. 3—5. — 2—4 inches high. This genus has the *pouch* of a *Teesdalia*, but the stamens of *Thlaspi*: the British species has the appearance of the former; while most foreign ones, if they really belong to the genus, have that of the latter.

#### 15. TEESDÁLIA Br. *Teesdalia*.

*Pouch* emarginate; the *valves* keeled; the *cells* 2-seeded. *Filaments* having a little scale within at the base. — Named in honour of Mr. *Robert Teesdale*, a Yorkshire botanist.

1. *T. nudicaulis* Br. (*naked-stalked T.*); petals unequal. *Iberis E. B. t.* 327.

Sandy and gravelly banks in many places. ☉. 4—6. — *Leaves* almost entirely radical, lyrato-pinnatifid. *Stems* 2—4 inches high,

with sometimes 1—2 small entire or cut *leaves*. *Flowers* white, two of the *petals* nearly three times longer than the other two.

. 16. *IBÉRIS* Linn. Candy-tuft.

*Pouch* emarginate; *valves* keeled and winged; *cells* 1-seeded. *Petals* unequal.—Named from *Iberia*, or *Spain*, where many of the species grow.

1. *I. \* amara* L. (*bitter C.*); herbaceous leaves lanceolate acute somewhat toothed glabrous, flowers racemose, pouch orbiculate with a narrow notch. *E. B. t.* 52.

Chalky fields, rare, but either the outcast from gardens or introduced with seed-corn; now not unfrequent in Oxfordshire and Berkshire. ☉. 7. — *Stems* spreading, often a foot high. *Leaves* very variable in their toothings. Whole plant, as its name imports, very bitter.

Tribe IV. CAKILINEÆ. *Fruit without valves or a dissepiment, jointed, each joint with one or more seeds, all but the upper one often abortive.* Cot. 0= (Gen. 17.)

17. *CAKILE* Gart. Sea-Rocket.

*Fruit* short, angular, of 2, 1-seeded indehiscent joints; the upper joint deciduous bearing an upright sessile *seed*, the lower one with an abortive or pendulous *seed*.—Name: an old Arabic word, applied probably to this or some allied genus.

1. *C. marítima* Willd. (*purple S.*); joints of the pouch two-edged, the upper one with two teeth at the base, leaves fleshy pinnatifid somewhat toothed. *Bunias Cakile* L.: *E. B. t.* 231.

Sandy sea-shores, frequent. ☉. 6, 7. — Bushy; *branches* crooked, and, as well as the whole plant, succulent. *Flowers* purplish, rarely white. *Fruit* thick, fleshy, at length somewhat woody; the upper joint is in reality the *beak* of the fruit, the *pouch* itself being usually abortive.

SUB-ORD. II. NOTORRHIZEÆ. Cotyledons incumbent (o||).

Tribe V. SISYMBRIÆ. *Pod elongated, with the valves convex or keeled, dissepiment linear.* Cot. o||. (Gen. 18—21.)

18. *HÉSPERIS* Linn. Dame's Violet.

*Pod* 4-sided or 2-edged. *Stigma* nearly sessile; the lobes elliptical, connivent. *Cal.* erect.—Named from *ἑσπερος*, the *evening*; at which time the flowers yield a powerful fragrance.

1. *H. matronális* L. (*common D.*); stem erect, leaves ovato-lanceolate toothed, limb of the petals obovate, pods erect toru-

lose their margins not thickened. *H. inodora* L.: *E. B. t.* 731.

Hilly pastures, in several parts of Great Britain, but perhaps always escaped from cultivation. *4.* 5—7.

(*Mulcolmia maritima* Br. has been found near Deal, Kent, by Miss Harvey, and in Jersey by the late Dr. R. Graham, but in neither place truly wild.)

### 19. *SISYMBRIUM* Linn. Hedge-Mustard.

*Pod* rounded or 6-angular; *valves* convex or 3-angled 3-nerved (rarely with the lateral nerves inconspicuous or wanting). *Hypogynous glands* none between the longer filaments. *Seeds* smooth, their *stalks* slender. *Stigma* entire. *Cal.* slightly spreading, equal at the base. — Name: *σισυμβριον*, given by the ancients to several plants, one of which is supposed to be a kind of cress; perhaps from *συν*, *with*, and *βρωμος*, *food*, because so eaten.

1. *S. officinale* L. (*common H.*); pods subulate pubescent close-pressed to the main stalk, leaves runcinate hairy, stem hispid. *Erysimum* L.: *E. B. t.* 735.

Waste places and by way-sides, plentiful. ☉. 6, 7. — One to two feet high, branched. The deep and cut serrated lobes are not always sufficiently decurved to constitute a *runcinate leaf*; the terminal lobe is very large, roundish in the lower leaves, and oblong in the upper ones. *Flowers* very small, pale yellow.

2. *S. Irio* L. (*broad H., London Rocket*); leaves runcinate toothed and as well as the stem glabrous, pods terete nearly erect. *E. B. t.* 1631.

Waste places, chiefly about London, where it covered the ground immediately after the great fire in 1666. Faulkourn, Essex. Berwick-upon-Tweed. Dublin. ☉. 7, 8. — *Flowers* yellow. *Pods* 2 inches long, erect, about four times longer than the pedicels.

3. *S. Sophia* L. (*fine-leaved H., or Flax-weed*); leaves doubly or trebly pinnatifid, lobes linear or linear-oblong, petals shorter than the calyx. *E. B. t.* 963.

Waste places, among rubbish; frequent in England, more rare in Scotland. ☉. 6—8. — Two feet high, branched. *Flowers* small, yellow. *Pods* terete, linear, slender, erect, but not appressed, about three times longer than the somewhat patent *pedicels*.

4. *S. thalianum* Hook. (*common Thale-cress*); leaves somewhat toothed downy, radical ones oblong subpetiolate, stem branched, pods ascending terete with 4 angles. *Arabis* L.: *E. B. t.* 901.

Walls, dry banks, and gravelly soils, common. ☉ Spring and autumn. — Six to ten inches high, slender, with few leaves, and those mostly radical. *Flowers* small, white. *Pods* twice the length of the

spreading pedicels; valves convex with only one conspicuous nerve, as in *Arabis*, with which it agrees better in habit; but the cotyledons are incumbent, and the pods are not compressed: from *Erysimum* it differs by the hairs on the leaves being spreading and not appressed.

## 20. ALLIARIA Adans. Garlic-Mustard.

*Pod* rounded; *valves* with one conspicuous nerve and two slender branched nerves or veins. *Hypogynous glands* between the longer filaments. *Seeds* striated, their stalks flat and winged. *Stigma* entire. *Cal.* slightly spreading, equal at the base. — Named from *Allium*, or *garlic*, which its leaves resemble in their odour.

1. *A. officinalis* DC. (common G., Jack-by-the-hedge, or Sauce-alone). *Erysimum Alliaria* L.: *E. B.* t. 796.

Hedge-banks and waste places. ♂ 5. 6. — 2—3 feet high, branched. *Leaves* large, veined, heart-shaped, stalked, sinuato-dentate. *Flowers* white. *Pods* erect, on spreading pedicels. Were it not for the seed-stalks, this might be placed in *Sisymbrium*.

## 21. ERYSIMUM Linn. Treacle-Mustard.

*Pod* 4-sided; *valves* 1-nerved. *Hypogynous glands* usually 2 opposite the placentas and between the longer stamens. *Seeds* smooth not margined, their stalk filiform. *Stigma* entire, or emarginate with the lobes patent. *Cal.* erect. (Pubescence appressed.) — Named from *ερωω*, to cure, on account of the supposed virtues of the plant.

1. *E. cheiranthoides* L. (Worm-seed T.); leaves lanceolate entire or slightly toothed with stellato-tripartite hairs, pods nearly erect 2—3 times longer than the spreading pedicels, stigma almost undivided nearly sessile. *E. B.* t. 942.

Fields, gardens, and waste places. ☉. 6—8. — One to two feet high, branched. *Flowers* small, yellow. *Glands* between the larger stamens 2-lobed.

2. *E. \* orientale* Br. (Hare's-ear T.); leaves cordato-amplexicaul, radical ones obovate, all glabrous glaucous and entire, stigma entire. *Brassica* L.: *E. B.* t. 1804.

Fields and cliffs near the sea; Essex, Suffolk. Sussex. ☉. 5—8. — *Flowers* white or cream-coloured. *Calyx* slightly bisaccate at the base. *Glands* wanting between the longer stamens, but the opposite sepals glandular at the base, thus differing from the genus as limited by C. A. Meyer.

Tribe VI. CAMELINEÆ. *Pouch* with the valves more or less convex or dorsally compressed, dissepiment oval or oblong. *Cot.* o||. (Gen 22—23.)

## 22. CAMELINA Crantz. Gold-of-Pleasure.

*Pouch* obovate or subovate; *valves* inflated, with a prominent

nerve at the base; *cells* many-seeded. *Filaments* simple. — Named from χαμαι, *dwarf* or *humble*, and λων, *flax*.

1. *C.\* sativa* Cr. (*common G.*); pouch obovate margined, valves hemispherical, stigma simple, calyx erect, leaves lanceolate sagittate. *Alyssum* *E. B.* t. 1254.

Fields, occasionally among flax, with which it has been imported. ☉. 6, 7. — *Stem* 2—3 feet high, paniced above, usually more or less pubescent. *Leaves* nearly quite entire, sometimes slightly toothed. *Flowers* small, yellow. *Pouches* very large, on long stalks. *Seeds* scabrous.

### 23. SUBULÁRIA Linn. Awl-wort.

*Pouch* oval, pointless; *valves* turgid; *cells* many-seeded. *Cotyledons* linear, curved. — Named from *subula*, an *awl*; the leaves being subulate or awl-shaped.

1. *S. aquática* L. (*Awl-wort*). *E. B.* t. 732.

Shallow margins of alpine lakes, not very frequent. ☿. 7. — *Roots* of numerous, long, white fibres. *Leaves* few, radical, awl-shaped, 1—3 inches long. *Scape* 2—4 inches high. *Flowers* small, appearing even under water. *Pouch* nearly approaching that of *Draba*, but with more turgid and convex *valves*, having one conspicuous middle nerve, and sometimes two fainter ones. *Embryo* with its *cotyledons* linear, long; and the curvature takes place, not at the very base of the *cotyledons* as in most other *Cruciferae*, but above the base, so that a section made below this exhibits the appearance of four *cotyledons* without a radicle.

Tribe VII. LEPIDINEÆ. *Pouch* with the *valves* keeled or convex; or *fruit* short and indehiscent, 2-celled: *dissepiment* very narrow. *Cot.* o||, rarely (in *Lepidium*) o=. (*Gen.* 24—26.)

### 24. CAPSÉLLA De Cand. Shepherd's Purse.

*Pouch* laterally compressed, obcordato-cuneate (or elliptical); the *valves* navicular, without wings; *cells* many-seeded. — Name: the diminutive of *capsula*, a *capsule* or *little box*.

1. *C. Bursa Pastóris* DC. (*common S.*); pubescent or hairy, stem-leaves sessile lanceolato-sagittate, pouch obcordato-cuneate. *Thlaspi* L.: *E. B.* t. 1485.

Corn-fields and waste places, everywhere, most abundant. ☉. The whole summer. — Very variable, from 3 inches to 1—2 feet high. *Leaves* all generally toothed and rough with hairs; *radical* ones more or less pinnatifid. *Flowers* small.

### 25. LEPÍDIUM Linn. Pepper-wort.

*Pouch* with the *cells* 1-seeded; the *valves* keeled or winged. *Petals* equal. *Cot.* sometimes o=. — Name: λεπίς, a *scale*, from the form of the little pouches.

1. *L. latifolium* L. (*broad-leaved P.*); leaves ovato-lanceolate undivided serrated or entire, pouch oval entire downy with a minute style. *E. B. t.* 182.

Wet shady places, near the sea and salt-marshes; in Norfolk, Essex, and Yorkshire. Weems and Donibristle, in Fifeshire, but apparently only naturalized. *℥.* 7, 8. — *Stem* 2—3 feet high, branched, erect, with large leaves. *Flowers* numerous, small, in many terminal and axillary clustered racemes.

2. *L. \** *Draba* Br. (*Whitlow P.*); leaves amplexicaul broadly oblong or lanceolate entire or toothed, pouch cordate entire at the apex crowned with a style about its own length, valves turgid. *E. B. S. t.* 2683.

Fields and hedges, rare. Swansea; at St. Peter's and Ramsgate, Isle of Thanet; banks of the railway at Forest-hill, Surrey; left bank of the Dee below Chester. *℥.* 5, 6. — *Stem* 8—10 inches to a foot high, branched, with large distant leaves and almost umbellate corymbs of numerous small flowers. *Pedicels* very long.

3. *L. ruderale* L. (*narrow-leaved P.*); flowers diandrous without petals, radical leaves pinnatifid, those of the branches linear entire, pouch roundish-oval emarginate patent with a minute style. *E. B. t.* 1595. ■

Waste places near the sea, and among rubbish. ☉. 5, 6. — The typical form of the plant, with petals and six stamens, is as yet unknown, unless described as a distinct species. *Stem* sometimes a foot high, much branched. *Seed-vessels* numerous. *Cotyledons* incumbent, as in most of this genus; whereas those of its very near affinity, *L. Virginicum*, are accumbent.

4. *L. campêtre* Br. (*common Mithridate P.*); pouch ovate emarginate winged rough with minute scales, style scarcely longer than the notch, cauline leaves sagittate toothed. *Thlaspi L. : E. B. t.* 1385.

Corn-fields and dry gravelly soils; not uncommon in England and Scotland. ☉. 5—8. — *Stems* solitary, erect, 10—12 inches high, corymbosely branched above. *Lower leaves* almost spatulate, all slightly pubescent, as well as the racemes and pedicels. *Pouch* curiously scaly.

5. *L. Smithii* Hook. (*smooth Field P.*); pouch ovate emarginate winged glabrous occasionally with a few minute scales on the back, style much exerted beyond the notch, cauline leaves sagittate toothed. — *Lepidium hirtum* Hook. Scot. *Thlaspi hirtum* Sm. (not L.): *E. B. t.* 1803.

Borders of fields and hedges in Norfolk and Suffolk. Caernarvonshire and Anglesea. Frequent, particularly in the west of Scotland. Belfast and Dublin, plentiful. *℥?* 4—8. — *Stems* many from the same biennial or perhaps perennial root, 6 inches to more than a foot high, diffuse, irregularly branched. Much resembling the last, but truly distinct. *Pouch* with a much longer style, quite gla-

brous, and smooth or even; except that sometimes on the middle of the back there are a few minute scales. When glabrous it is the *L. heterophyllum* of Bentham, from the Pyrenees; our common form is found, however, in the north-west of France.

## 26. *SENEBIÆRA* De Cand. Wart-cress.

*Fruit* broader than long, 2-celled, without *valves* or wings; *cells* 1-seeded. *Cotyledons* long, linear, curved. — Named in honour of *M. Senebier*, an eminent Genevese physiologist. (We now adopt *Senebiera* in place of *Coronopus*, in consequence of its being generally preferred; but the latter appellation given by Gærtner is certainly the oldest; and although it may not happen to be the precise plant of the ancients, many other received names are in the same predicament.)

1. *S. Coronopus* DC. (*common W., Swine's-cress*); fruit undivided crested with little sharp points, style prominent. *Coronopus Ruellii* Sm.: *E. B.* t. 1660.

Waste ground, not unfrequent in England. Rare in Scotland. ☉. 6—9. — A much branched spreading weed. *Leaves* bipinnate, their segments linear. *Flowers* very small, white, in lateral axillary corymbs. *Pouch* large in proportion to the flower, curiously crested. *Cotyledons* (in the whole genus) nearly as in *Subularia*.

2. *S. didyma* DC. (*lesser W.*); fruit emarginate of two wrinkled lobes, style very short. *Coronopus* Sm. *Fl. Brit.* *Lepidium* *E. B.* t. 248.

Waste ground near the sea, in the south and south-west of England; about Exeter, Truro, Penrhyn, and Milfordhaven. Shore near Caernarvon. South of Ireland. ☉. 7—9. — *Leaves* once or twice pinnate.

Tribe VIII. ISATIDÆÆ. *Fruit short, 1-celled, 1-seeded, with keeled scarcely dehiscent valves.* *Cot.* o||. (Gen. 27.)

## 27. *ISÁTIS* Linn. Woad.

*Fruit* 1-celled, 1-seeded, laterally compressed; *valves* keeled or winged, eventually separating at the apex. *Hypogynous glands* between the longer stamens. — Name: *ισαρίς* of the Greeks.

1. *I. \*tinctória* L. (*Dyer's W.*); fruit glabrous obovate-oblong about three times longer than broad, radical leaves oblong crenate, those of the stem sagittate. *E. B.* t. 97.

Cultivated fields, about Ely, Durham, &c. ♂. 7. — *Flowers* yellow. Cultivated for the sake of the blue dye which it yields, hence called *Glastum* by the Romans, from *glas*, the Celtic for *blue*. Woad seems to take that name from *Guadam*, now *Gualdo*, in Italy, where it was formerly extensively cultivated.

SUB-ORDER III. ORTHOPLOCEÆ. Cotyledons conduplicate ( $0 > >$ ).

Tribe IX. BRASSICÆ. *Pod elongated. Dissepiment narrow. Cot. 0 > >*.

28. *BRÁSSICA* Linn. Cabbage, Turnep, Navew.

*Pod* 2-valved (with a sterile, or one- or several-seeded beak). *Seeds* in a single row. *Calyx* erect.<sup>1</sup> — Name derived from the Celtic *bresic* (modern Gaelic *praiseach*), a kind of cabbage, or rather pottage, made of it.

\* *Valves of pod 1-nerved, veiny; beak usually sterile.*

1. *B. olerácea* L. (*Sea C.*); root caulescent cylindrical fleshy, all the leaves glabrous glaucous waved and lobed, upper ones oblong sessile. *E. B. t.* 637.

Cliffs by the sea: Devonshire, Dover, Wales, Cornwall, Yorkshire, and in the Frith of Forth, ♂. 5—8. — Varying in height 1—2 feet. *Leaves* thick, subcarinose, the uppermost undivided, but toothed. *Flowers* large, yellow. — The origin of our garden *Cabbage*.

2. *B. \*Nápus* L. (*Rape*, or *Cole-seed*); leaves glabrous somewhat glaucous especially on the under side, lower ones lyrate toothed, upper cordato-lanceolate amplexicaul, pods spreading. *E. B. t.* 2146.

Corn-fields and waste ground, frequent in England. ♂. 5, 6. — 1—2 feet high. *Root* slender or fusiform. *Lobes* of the lower leaves crenate, upper leaves entire more glaucous. *Petals* yellow, rather small. *Pods* torulose. — The slender-rooted variety is cultivated for the oil produced by its seeds, which after pressure are formed into cakes and used as manure and for feeding cattle; but the slender-rooted variety of *B. campestris* is much more employed for the same purpose on the Continent, under the name of *Colsa*.

3. *B. campestris* L. (*common wild N.*); upper stem-leaves cordate acuminate amplexicaul glabrous, lower and radical

<sup>1</sup> As the distinction between this genus and the next is purely artificial, some Botanists have proposed to unite them along with *Moricandia* and *Diplotaxis*: on the other hand, some writers of local floras have proposed to neglect the characters obtained from the calyx, and place the species of either which have a single nerve to the valves of the pod in *Brassica*, and those with three or more nerves in *Sinapis*. But this arrangement is often more unnatural than the old one of Linnaeus, and none can be tolerated, if a division takes place, which removes *Sinapis nigra* from that genus, of which it is the acknowledged type. We would prefer restricting *Brassica* to our four first species, and *Sinapis* to *S. nigra*, removing *S. alba* to *Ramphospermum*, &c.; but many species cannot thus be disposed of in already recognised genera, and besides it is almost practically impossible to distinguish between one nerve with two strong longitudinal, nearly straight, or slightly branched veins, and three nerves with connecting veins.



ones lyrate dentate subhispid glaucous, pods erect. *E. B.* t. 2234.

Corn-fields and sides of rivers and ditches, in many places. ☉ or ♂. 6, 7. — *Root* fusiform, slender and annual in the wild plant, often turnep-shaped and biennial in the cultivated one. *Stem* hispid below. *Flowers* yellow. *Pod* cylindrical or obscurely 4-angular; *seeds* forming slight prominences; beak awl-shaped, striated, sometimes with a single *seed*. — Apparently the origin of the *Swedish Turnep* of our agriculturists, and in Scotland it has never been found except where the *Swedish Turnep* had been previously cultivated.

4. *B. \*Rāpa* L. (*common T.*); root orbicular or oblong fleshy, radical leaves lyrate scabrous not glaucous, lower stem-leaves incised, upper ones cordato-ovate acuminate amplexicaul smooth. *E. B.* t. 2176.

Borders of fields and waste places. ♂. 4—7. — Varying exceedingly in height, according to soil. Upper *leaves* subglaucous; all more or less toothed. Although the three last are readily distinguished in cultivation by their radical leaves alone, there are strong grounds for considering all to be varieties, as they scarcely differ in other respects.

**\*\* Valves of pod 3-nerved; beak 1—3-seeded.**

5. *B. Monēsis* Br. (*Isle-of-Man C.*); leaves pinnatifid, stems prostrate nearly leafless and glabrous, pods compressed or slightly 4-angled. *Sisymbrium L.*: *E. B.* t. 962.

On the isles and shores of the Clyde, and on both sides of the Irish Channel, Argyleshire, Ayrshire, &c.; Isle of Man. ♀. 5—8. — *Leaves* usually glabrous, except on the *petioles*. *Stems* slightly hispid, greedily eaten by sheep and cattle, and probably deserving of being cultivated as fodder.

6. *B. Cheirānthus* Vill. (*Wall-flower C.*); leaves stalked hispid all deeply pinnatifid, lobes oval oblong unequally toothed, in the upper one linear, base of the stem hispid, pods cylindrical. *Sinapis Koch*: *E. B. S.* t. 2821.

Sands of St. Aubin's Bay, Jersey. ♂. 6—8. — Distinguished from *B. Monensis* principally by the upright and more leafy and hispid stem. Mr. Borrer is of opinion that it does not differ.

## 29. SINĀPIS Linn. Mustard.

*Pod* 2-valved (with a sterile or one- or several-seeded beak). *Seeds* in a single row. *Cal.* patent. — Named from the Greek σινάπι, the *common Mustard*, which again Théis derives from the Celtic *Nap* (modern Gaelic *Neup*), a *Turnep*.

**\* Valves of pod 1-nerved.**

1. *S. nīgra* L. (*common M.*); pods appressed glabrous tetra-

gonous, beak sterile short-subulate, upper leaves linear-lanceolate entire glabrous. *E. B. t.* 969. *Brassica Koch.*

Under hedges and in waste places, in England, very rare in Scotland (if wild). ☉. 6—9. — *Stem* 3—4 feet high. *Lower leaves* large, lyrate, rough. *Pod* with a short empty beak, or rather only the persistent *style* and *stigma* at its summit; its *valves* bluntly but so strongly 1-nerved as to make it quadrangular, the four sides being flat and without any prominent veins. — The seeds yield the mustard of our tables; of which the best is that from which the oil has been expressed, as originally prepared by Mrs. Clements of Durham.

2. *S. incána* L. (*hoary M.*); pods appressed terete prominently veined with a short 1-seeded beak, leaves lyrate hispid, cauline ones linear-lanceolate, stem much branched. *Erucastrum Koch*: *E. B. S. t.* 2843.

On the Quenvais, Jersey, but rare. ♂. 7, 8. — *Pods* glabrous or hairy, with a glabrous beak and single seed. *Seeds* ovate, compressed; on which account it has been removed to the genus *Erucastrum*, but it is less allied to *B. Erucastrum*, the type of that genus, than to *Sin. nigra*.

\*\* *Valves of pod* 3—5-nerved.

3. *S. arvensis* L. (*wild M., Charlock*); pods glabrous with many angles turgid and knotty longer than the slightly compressed beak, stem and leaves bristly. *E. B. t.* 1748.

Corn-fields, too frequent. ☉. 5—8. — *Stem* 1—2 ft. high, rough. *Flowers* rather large, yellow. *Calyx* very spreading. *Beak* of the pod usually empty, sometimes with one seed.

4. *S. álba* L. (*white M.*); pods hispid turgid shorter and slightly narrower than the flat ensiform beak, leaves pin-natifid. *E. B. t.* 1677.

Waste places, frequent in England; more rare in Scotland. ☉. 6, 7. — *Stem* 1—1½ ft. high, sparingly hairy or glabrous. *Leaves* usually glabrous, the lobes variously cut and toothed, or erose. *Flowers* large, yellow. Well distinguished from the other British species by its long, thin beak, which contains a single seed.

### 30. DIPLÓTÁXIS *De Cand.* Rocket.

*Pod* linear, compressed (with usually an empty beak), 2-valved; the *valves* slightly convex, 1-nerved. *Seeds* (oval or oblong) in two rows. *Calyx* patent. — Named from διπλος, *double*, and ραξις, a *series*, in allusion to the two rows of seeds.

1. *D. tenuifólia* DC. (*Wall R.*); pods shortly beaked erect, pedicels spreading, stems erect leafy, leaves lanceolate very acute pinnatifid or bipinnatifid glabrous. *Sisymbrium L.*: *E. B. t.* 525. *Sinapis Br.*

Old walls and heaps of rubbish about great towns, in the south,

south-west, and east of England; as London, Bristol, Yarmouth, Chester. St. David's, Fifeshire, but introduced with ballast. 2. 6—9. — *Root* thick. *Stem* 1—1½ ft. high, glabrous, almost woody at the base. *Flowers* large, yellow. This plant smells disagreeably.

2. *D. murális* DC. (*Sand R.*); pods shortly beaked erect, pedicels spreading, stem herbaceous spreading leafy only at the base, leaves sinuate glabrous. *Sisymbrium* L.: *E. B.* t. 1090. *Sinapis Br.*

Sandy barren fields near the sea, in the south and south-west of England, Isle of Thanet, and below Bristol. Edinburgh and Dunfermline, but not truly wild. ☉. 8, 9. — Very like the preceding, but annual, and much smaller and less leafy.

*Tribe X. VELLÆ.* *Pouch with the valves convex; dissepiment broad.* *Cot.* o > >. (*Gen.* 31.)

### 31. *VÉLLA* Linn. Cress-rocket.

*Pouch* swollen, 2-celled, with a dilated, flat, winged *style*, twice as long as the *valves*. *Seeds* 4 in each cell. *Cal.* erect. — Named from *veler* in Celtic (in modern Gaelic *biolar*), the *cress*.

1. *V. \*ánnua* L. (*annual C.*); leaves bipinnatifid, fruit pendulous. *E. B.* t. 1442. *Carrichtera Vellæ* DC.

Sandy fields. Salisbury Plain: *Lawson*. ☉. 6. — Not found since the time of Ray.

*Tribe XI. RAPHANÆÆ.* *Fruit with the pod or lower part abortive and stalk-like, consisting of a beak without valves, divided transversely into 1-seeded cells sometimes separating.* *Cot.* o > > (*Gen.* 32, 33.)

### 32. *CRÁMBE* Linn. Kale.